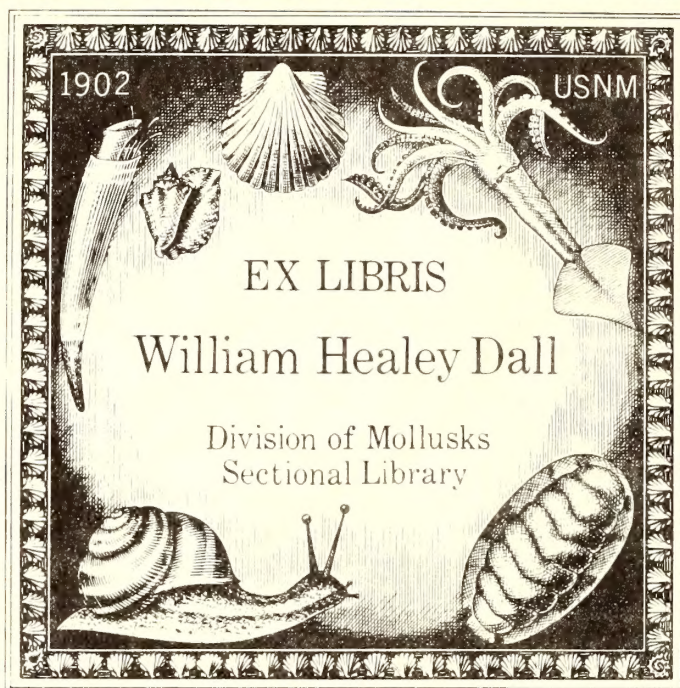






MINUTES 126

JAN-FEB. 1953

Division of Malacology
Sectional Library

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax. 3-5710
Home- Ax 2-7965

A personal communication from Dr. A. Myra Keen, Stanford University

" Students who are just becoming familiar with the International Rules of Zoological Nomenclature often ask me what a lapsus calami is. I now have a good example to cite, for I have just discovered that in the " Illustrated Key to West North American Gastropod Genera", I consistently wrote "Tethys" for "Aplysia". I wonder if you can publish the following errata list in the Minutes so that owners of the booklet can make necessary corrections. A mimeographed list of corrections is to be inserted by the Stanford Press in all unsold copies of the work."

Errata for Keen and Pearson

" Illustrated Key to West North American Gastropod Genera"
Read Aplysia for Tethys in the following places: page 10, paragraph 26; page 10, figure 6; page 36, line 8; and in the index, pp 37 and 39, alter the Aplysia entry to read, "(LXXIII), 10" and the Tethys entry to read, " see Aplysia".

Read Aplysiidae for Tethyidae on page 36, line 7.

On page 37, Boreotrophon, "20" should be "29".

On page 39, column 2, the first five lines should follow line 23 after Turcica

Letter from Allyn G. Smith

Dear John: Last week-end I was in the Carmel region and completed arrangements for our next AMUPD meeting in June. The set-up for accommodations and meals is all fixed, I think. Dropped in on Merton Hinshaw at the Pacific Grove Museum and he has consented to handle registration arrangements, as he is on the ground and knows the manager at Asilomar.

The fact that the state has taken over Asilomar will have no affect on our plans, as it will continue to be run much as before. However, since it is to be a State Park, a section of beach probably will be closed to collecting. As near as I could find out, this will include Moss Beach but will not cover the area near Pt. Joe or affect the area from Pt. Joe to Cypress Pt. where most of the best collecting is anyway. The Great Tide Pool is also not affected, as it is in the Lighthouse reservation area, and, of course, the area around Pt. Pinos is open to collecting still. Merton tells me that there is a small stretch of rocky shore north of Lovers Pt. at Pacific Grove where one can collect. This~~is~~ used to be very good in the old days.

... Have to get a few more details settled before the full announcement can be written.

Dr. Hanna tells me he and Joe Slevin will be with the Sefton Expedition for three months, collecting shells, fish, amphibians, etc. on the islands of the Gulf. Sounds like a fine opportunity. Wish I had the time to go on a clambake like this. Then Doc tells me he plans to be on the Scofield for a month. She is to make a deep water survey off the coast of San Luis Obispo County. With new and more powerful equipment, and with 27,000 feet of new cable, she can go as deep as 3000 fathoms, I should think, if they go far enough off shore, outside the continental slope.

Also, I am still working at odd moments on an author and title index to the Minutes which you may like to have some time. It's slow work with the little time I have these days. It will run to a number of pages, so when finished, you could make a special issue of it. I plan to cover the Minutes to and including No. 120, as I now have these bound in good buckram. You should see it; it makes an imposing library run.

We are certainly enthused about that Index. I can't find anything in them anymore myself. John.

Note from Karl W. Greene, Honolulu, T. Hawaii

"... By the way, a live Conus tessulatus was taken a few weeks ago about two miles from shore on a 25-30 foot shoal around a bell bouy in Haleiwa Bay, Oahu. First of record in the Hawaiian Islands.

"No, I do not have a Conus fergusonii, although I was promised one before Captain McDonald died, but his fire at Monterey and his poor health for months before his death, have prevented me from getting one of this species, which he said he had earmarked for me."

* I may add that I had not known of the death of Captain McDonald. He was a very enthusiastic collector and we corresponded and exchanged for a number of years both while he was living in Monterey and while he was in Guan. We knew of the almost tragical loss of most of his collection in a fire that destroyed his home in Monterey.

Letter from Dr. Harold Harry

... The Minutes I enjoy continually,...I particularly like to read your editorializing: It seems to me science has a tendency to lapse into dogmatism, and the sort of effort you put forth, in the form of those editorials, will do much ...

My summer has been extremely busy, with field work in the Eastern U.S. This fall I'm trying to get reports of this work cleaned up. Am also hurrying to get off a lot of equipment to Guam. I've been invited out there for the months of Jan. Feb. 1953, by two shell enthusiasts from here. It is a small "expedition", but every chance must be taken, I feel.

Bob Harry (Robert R. Harry, Stanford: we are not related) has just joined the Academy as Associate Curator of Fishes. He flew back to San Francisco this morning to be on a T.V. show concerning his trip to the South Pacific (Vanderbilt Exped.) this last summer. I believe J.P.E. Morrison was on the same expedition.

Dr. van der Schalie may be through here in the next few days. He's on his way to Switzerland, then on to Egypt for a year, where he'll be working on the molluscan aspects of Schistosomiasis for a year.

On our trip to Guam, we pass through California at San Francisco, but only long enough to change planes, so I regret that I'll not be able to contact all my friends out there.

Dr. Pilsbry is in every day 9:00 to 5:00. He is planning to go to Florida again this winter. Even though I am officially...

Mitra belcheri Hinds- One of the fishermen off La Paz, Lower California just sent us a nice batch of these shells. These are about as large as any Mitra I have ever handled- between 5 and 6 inches, coal black and quite attractive in spite of the somber color. I am not at all sure about the range of this species but all I ever had before came from very much farther south and I have always considered it a Central American shell. John Burch.

Arthur Price, our regular and enthusiastic member, and one whom we all considered a candidate for a charter member of the bachelors club, surprised us by introducing us to his charming wife who promises to become a shell addict also. They were married on Jan.4th.

Leo A. Burry of Pompano, Florida died after a long illness. He was well known to almost all in the world of shells and on his deep water trips brought in a great many rarities. We have heard none of the details.

Manila- Jan. 11 - L.A. Examiner- Pearl oysters similar to those found in Japan's Hiroshima Bay, have been discovered in Lingayen Gulf on the west coast of Luzon. The government has started survey work on a project to develop a combined oyster pearl and sponge culture.

The Miami Herald, Sunday, Feb. 1, 1953

A Coral Gables geologist will fly 2000 miles next month on an expedition to hunt sea shells in Ecuador. He's Axel A. Olsson, 1906 Ferdinand Street. The expedition is being sponsored by the Academy of Natural Science and the American Philosophical Society, both of which have headquarters in Philadelphia. Two thousand dollars has been supplied by the organizations, Olsson said, to provide for six weeks of specimen collecting and research in the

sea coast around Manta, 150 miles southwest of Quito, the Ecuadorian capital. Accompanying Olsson on the expedition will be two other men, rated by the 63 year old scientist as "the two foremost shell collecting experts in Florida". They are Thomas McGinty of Boynton Beach, and Jay Weber, 1400 NE 108th St., North Miami. After leaving Miami on a commercial airliner, on Feb. 21, the group will charter a small vessel in Manta from which trawling and dredging operations will be conducted. In addition to gathering hard specimens, shells in their formative stages bearing living organisms, will be procured. These will be preserved in glass containers of alcohol for shipment to the Natural Science Museum. Olsson plans to write a scientific book on shells of the Northwest coast of South America. To the average person the prospect of shell hunting in South America would hold little allure. But to Olsson, a graduate of Cornell, it holds all the fascination of a junket to an unexplored world. "We will be working in the field of pure science," he said, "and, as such, there will probably be no immediate practical findings." Olsson has not always operated in the realm of "pure science" as he classifies it. It is something that has occupied his time since, with an unmarried sister and a brother, a bachelor like himself, he retired, moved here from Philadelphia and purchased a home in Coral Gables a year ago. Before his retirement as a staff geologist employed by the Standard Oil Co., Olsson spent many years in South America doing outright industrial research. He made his first trip to South America for his company in 1922."

St Petersburg Times- Sunday, Feb. 8, 1953- Shells Worth \$75,000 to Be Shown Here. A gigantic Sea and Land Shell Show ... will be held at the Rod and Gun Club, on the shores of Lake Maggiore at Ninth Street South and 37th Ave., Feb. 20-27. This is the eighth show of this kind to be held in St. Petersburg. This year's display, according to Chairman Hardy Bryan Jr., past president of the Rod and Gun Club, and Myron P. Van Woert, president of the Shell Club will be the finest ever held in Florida.

We have had pleasant letter from Dwight Taylor, our member from Pasadena and also from Mr. Alan Solem, both now at the University of Michigan, Museum of Zoology, Ann Arbor, Michigan.

The Miami Herald, Feb. 1, 1953- The University of Miami's Marine Laboratory, which was started in an old boathouse with more hope than help, celebrates its 10th birthday today as a lusty and still growing young giant in the specialized field of marine science.

The lab now has students from throughout the world, more than \$300,000 in research contracts, and the beginnings of its own, up-to-date home on a five acre site on Virginia Key. It was created Feb. 1, 1943, with Dr. F.G. Walton Smith as director, a position he still holds.

Letter from Miss Gertrude Thornley, N.S.W., Australia...

"I was especially interested in the discussion about the giant African snail. Do you know that around Sydney we have a cannibal snail, that eats other snails? One of our members introduced it to his garden, and it cleaned up all the Helix aspersa so quickly that in a year it had spread right along the block, and none of those homes had any left. The name of this shell is Strangesta capillacea, and I wonder what sort of a job it would make of the African fellow? The only trouble about Strangesta is that it isn't

very common, but given good eating and good conditions it might do very well, don't you think? I'd rather like to see it tried in Hawaii anyway".

* Note* A few of these chaps might do very well in the Burch garden.

NEW PUBLICATIONS RECEIVED

A Historical Review of the Mollusks of Linnaeus- Part I. The Classes Loricata and Pelecypoda- By Henry Dodge. Bulletin of the American Museum of Natural History, Vol. 100: Art. 1, New York 1952.

This is a very large and complete work 263 pages. The synonymy and discussion is very complete and carefully done. All interested in taxonomy will find this new book invaluable. Price \$4.00.

The Nautilus, Vol. 66, No.3, Jan. 1953- The papers are:-
Observations on a living specimen of *Octopus hummelincki* Adam-
By Gilbert L. Voss.

Murex bicolor Val. in Florida. By Margaret M. Teare
Fastigiella carinata Reeve, a little known mollusk. By H.A. Pilsbry
Three new species of *Philomycidae*. By Leslie Hubricht.
Mollusks from an interglacial deposit in Meade Co., Kansas. By
Henry van der Schalie

A study of Lamarck's types of *Unionidae* and *Mutelidae*. By Richard L. Johnson (concluded)

The position of *Xesta cineta* (Lea). By Harald A. Rehder.

Some *Sphaeriidae* of Utah. By H.B. Harrington and E.J. Roscoe

A Colombian *Pomacea* of the *Effusa* group. By H.A. Pilsbry and
A.A. Olsson.

Ventridens in Staten Island, New York. By Morris K. Jacobson.

Disposing of suplicate shells. By Merrill Moore.

And in the Notes etc. some interesting items-

Dr. Pilsbry celebrated his 90th birthday on Sunday, Dec. 7, 1952

AND beginning with Vol. 67 (July, 1953) the Nautilus will be

\$3.00 per year instead of \$2.50.

Proceedings of the Malacological Society of London- Vol. 29,
Part 6, 16 January, 1953- The papers are:

The *Octopus* larvae of the Thor. By W.J. Rees

Note on *Phyllirrhoe bucephala* Peron & Leseueur, and *Mneustra* parasites
Krohn By W.J. Rees

Pomacea ghiesbreghtii (Reeve) in Guatemala. By T. Pain

A second note on the validity of *Vallonia excentrica* Sterki. By
Bengt Hubendick.

The morphology of *Acmeofusca* (Montagu) with special reference to
the genital system. By Gwendoline A. Creek.

A Key for use in the identification of British Chitons. By Gillian
Mathews.

*** This is an extremely interesting paper at least to those of
us who have ever struggled trying to make some kind of a key to
West Coast chitons. Wish I had some British chitons to try it out.
All chiton keys I have ever seen before seemed to work only for
the authors.

The alimentary and vascular systems of *Alderia modesta* (Loven) in
relation to its ecology. By T.J. Evans.

And in this issue there is a new list of the members to date.

MINUTES OF THE CONCHOLOGICAL CLUB
OF SOUTHERN CALIFORNIA

January 6, 1953

The president, Mrs. Harry Turver, called the January 6th meeting to order at 7:30 p.m. and welcomed the 25 guests and members by saying:

"This New Year's wish to happiness is warm and most sincere;
What's more, it's meant not just for now, But right along next year."

"I know that we will all work together and pull together for another successful year. Now that I am your president, having been elected by you, I will do all in my power to follow in the past presidents' footsteps and keep up the good work they all did for the club, and with the help of each one of you and the wonderful committees, I feel confident that this will be another banner year."

Mrs. Turver appointed the following chairmen:

Nomenclature - Mr. John O. Burch

Membership - Dr. W. O. Gregg

Educational - Dr. Howard Hill, Dr. A. D. Howard and Mrs. Emery P. Chace

Field - Mr. Harry Turver

Cabinet - Mr. L. C. Bessom

Miss Bessie Falconer, secretary-treasurer for 1952, read the annual report. It was moved by Mr. Caruthers and seconded by Mrs. Chace that the report be accepted and filed with club records. It was so ordered. This report showed 58 regular members, two associate members and three honorary members.

It was moved by Miss Coats that the secretary be asked to have address stencils made for membership at 5¢ each. It was seconded by Mr. Bessom, carried and so ordered. It was moved by Mrs. Chace and seconded by Mr. Caruthers to amend the By-laws by inserting "and a" after secretary, to read "A secretary and a treasurer" instead of "a secretary-treasurer". This amendment will be read at the February 3rd meeting and at this time a vote on the amendment will be called for.

The president had two beautiful cards addressed to our friends and members, Mr. and Mrs. H. Arden Edwards, who have recently moved back to the Antelope Valley Museum, Box 167, Wilsona Route, Lancaster, Calif. The members and guests who signed the cards sent best wishes to the Edwards- we hope to visit them. (Note by secretary, who once lived at the beach- We should be sure to take picnic lunches along).

At this time members passed papers and cards they wished to share.

Miss Coats, vice-president and program chairman, was introduced. Miss Coats left her home in Carlsbad at 6 a.m., going to Redlands where she was a luncheon guest of Dr. S. Stillman Berry before they left for Los Angeles, arriving at the Burch home in time for dinner and to attend the meeting. We have a wonderful go-getter of a program chairman, and she presented the speaker of the day, Dr. S. Stillman Berry. Dr. Berry is not only a molluscan authority, but an authority on many subjects. He shared with us his "Molluscan Note from Punto Penasco Region". Dr. Berry has collected in this region many times and calls it one of the richest, if not the richest, shell collecting regions in

Minutes (Cont.)

the Gulf. For example, he has collected 80 to 90 pyramidellidae alone.

Punto Penasco translated means Rocky Point. The cove here is a remarkable place- at high tide it looks like a large lake, at low tide a strand is exposed and one can then walk across to the outer reef where many interesting specimens can be taken.

Dr. Berry has been helped by material from the following collectors: Mr. Herbert M. Lowe, Dr. A. Myra Keen, the Turvers, the Mousleys and the Fletchers. The fauna is almost wholly tropical. The Mazatlan Catalogue by Carpenter lists 692 species, of which 14 have been removed, leaving 678 species. Dr. Berry has personally collected 557 of these.

Members present felt that they had learned much from Dr. Berry about this valuable collecting ground, and after the meeting observed and studied the many species mentioned in the talk. The meeting adjourned at 9:45 p.m.

Respectfully submitted,

Mrs. John Q. Burch, secretary

Page 7

SOME LAND AND FRESH-WATER SHELLS
FROM THE
MONTEZUMA CASTLE NATIONAL MONUMENT
YAVAPAI COUNTY, ARIZONA

by

Allyn G. Smith

Through the courtesy of Mr. Lloyd M. Pierson, Archaeologist at the Montezuma Castle National Monument in Arizona, I had the recent opportunity to study and identify some land and fresh-water shells of this interesting region. The material consisted of less than a normal sized thimbleful of drift collected by Mr. Pierson on the banks of Beaver Creek, a tributary of the Verde River.

This small lot of shells contained a total of about 290 specimens. Represented were 12 families (7 land; 5 fresh-water); 19 genera (14 land; 5 fresh-water); and 23 species (17 land; 6 fresh-water). A list of these follows, with the number of specimens representing each species:

LAND SHELLS

Family Sagdidae	No. Specimens
<u>Thysanophora horni</u> (Gabb)	64*
Family Zonitidae	
Euconulus fulvus alaskensis (Pilsbry)	3
Retinella indentata paucilirata (Morelet)	4*
Zonotoides arboreus (Say)	3

Family Endodontidae

No. Specimens

<u>Discus cronkhitei</u> (Newcomb)	3
<u>Helicodiscus singleyanus</u> ? (inermis H.B. Baker)	48*
This species is difficult to separate from <u>Hawaiiia minuscula</u> (Binney), also reported from the area. Lack of microscopic lines on these specimens would normally place them in the subspecies <u>inermis</u> , which is not normally found in the area although the species is fairly common. Hence the ?.	
<u>Punctum californicum</u> Pilsbry	1

Family Succineidae

<u>Succinea avara</u> Say	3
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Family Pupillidae

<u>Gastrocopta ashmuni</u> (Sterki)	1
<u>Gastrocopta pentodon</u> (Say)	2
<u>Gastrocopta pellucida hordeacella</u> (Pilsbry)	12*
<u>Pupoides albilabris</u> (C.E. Adams)	55*
<u>Pupilla muscorum</u> (Linnaeus)	3*
<u>Vertigo ovata</u> Say	1

Family Cionellidae

<u>Cionella lubrica</u> (Mueller)	9
-----------------------------------	---

Family Valloniidae

<u>Vallonia perspectiva</u> Sterki	20*
<u>Vallonia sonorana</u> Pilsbry	1*

Some authorities consider this a variant of V. albula Sterki. The species is not well known. Subject to your consent, I am retaining this specimen to use for comparison work. It is new to my collection and the California Academy does not have it to my knowledge.

FRESH-WATER SHELLS

Family Lymnaeidae

<u>Lymnaea parva</u> Lea	4
<u>Lymnaea</u> (species indet.)	1
Too young to identify from a single specimen	

Family Planorbidae

<u>Planorbis</u> (<u>Cyraulius</u>) <u>vermicularis</u> Gould	28
Previous records from Arizona and New Mexico have been credited to <u>P. parvus</u> Say. I believe, however, that all western specimens should take Gould's name rather than Say's.	

Family Amnicolidae

No. specimens

Amnicola palomasensis Pilsbry

1

Family Physidae

Physa (species indet.)

7

Too young to identify.

Family Spheariidae

Pisidium cf. abditum huachuacmun Pilsbry & Ferriss

16*

Mr. Pierson states that Beaver Creek drains a goodly portion of the Mogollon Rim. He points out correctly that while the elevation of the Monument is 3200 feet, many of the shells were undoubtedly washed down from neighboring higher mountains.

MINUTES OF THE CONCHOLOGICAL CLUB
OF SOUTHERN CALIFORNIA

February 3, 1953

The president, Mrs. Harry Turver, called the February 3rd meeting to order at 7:30 p.m. and welcomed twenty members and one guest.

The January 6th minutes were read and approved.

Mrs. Chace told, while on a collecting trip, of seeing Mr. and Mrs. H. Arden Edwards at the Antelope Valley Museum near Lancaster, California.

The secretary read the proposed amendment to the By-laws. It was moved by Mrs. Chace and seconded by Mr. Caruthers to amend the By-laws by inserting "and a" after secretary, to read "a secretary and a treasurer" instead of "a secretary-treasurer." A vote on the amendment was called for and the motion to amend was carried.

Mr. Burch nominated Miss Bessie Falconer for this new office of treasurer. The nomination was seconded by Dr. Howard, and since no other nominations were following, Miss Falconer was elected unanimously.

Mr. Burch gave the following report on nomenclature, passing around two exhibits, one a specimen of Murex pomum Gmelin as the type of the genus Phyllonotus Swainson, 1833. Type Murex imperialis = M. pomum Gmelin. It was obvious that the West Coast species so generally placed under this generic name are not Phyllonotus.

A specimen of Murex radix Gmelin was passed around the table also. An example of Muricanthus Swainson, 1840. Type Murex radix Gmelin. There is no question that Muricanthus is applicable to our West Coast species.

There are numerous other generic names to be considered and it was the opinion of John Burch that until these problems are settled, it is advisable to use the name Murex for all of them.

Mr. Turver, field trip leader, announced a 1.2 tide Saturday, the 14th of February, at 3:43 p.m., at which time it was decided to collect at Doheny State Park, south of Laguna, on U.S. Highway 101, the secretary to send out postal cards.

Mrs. Burch displayed a cut cone that had been sent in response to an article in Minutes 125, which article stated "a cypraea possesses, upon emergency, the extraordinary power of dissolving and renewing its shell." This half of the cone displayed showed how the outside of the inner walls were dissolved, showing none of the characters that were on the last whorl, leaving only paper thin inner walls, which were broken in the sawing process.

Mr. Schick, who has been successful in cutting not only minerals, but also shells, gave the following information- that if the shell is filled with paraffin before sawing, the shell will be unbroken when the paraffin is removed afterwards.

Miss Ruth Coats was unable to be with us, but sent the program with your secretary. It consisted of an address by William J. Clench on "Trends in Malacology", which was taken on a tap recording by Miss Coats at the 1951 meeting of the A.M.U. It was a valuable talk and the members not only enjoyed it but felt that they had also benefited from hearing it.

Mrs. John Q. Burch, secretary

MRS. IMOGENE C. ROBERTSON PASSES

February 9, 1953

It is with the deepest regret that I announce the death on February 6th, 1953, of Mrs. Imogene C. Robertson, 136 Buffum Street, Buffalo, N. Y. Although ill for several months, she greatly enjoyed the Christmas cards she received from hundreds of friends; not until the first of the year did her condition become critical, then she failed rapidly. She was eighty years of age.

Mrs. Robertson was Curator of Mollusks at the Buffalo Museum of Science from 1926 to 1941; upon retirement she was made Research Associate in Malacology, a position she held at the time of her death. A member of the Conchological Section of the Buffalo Society of Natural Sciences for fifty-three years, she was serving her seventeenth year as president of that group.

But it was as secretary of the American Malacological Union that she was best known. From the organization of the A.M.U. in 1930 until her resignation in 1951, many thousands of letters went out from her busy pen; it was her custom to answer each query with detailed attention, and to scrawl a cheery greeting on a routine announcement. It is her friendly spirit which newcomers to the Union often note and remark upon. "Genie" will be sadly missed.

(Mrs.) Margaret Teskey

MISS SHUMATE DIES IN COLORADO

We are sorry to report the death of Miss Agnes Shumate on Sunday, the 28th of December, 1952, in Colorado, where she had been called because of the illness of one of her family.

Miss Shumate was secretary of the Pacific Shell Club and will be greatly missed.

More New Publications Received

The Journal of Conchology- the organ of the Conchological Society of Great Britain and Ireland. Papers are as follows:

A sinistral *Pila* from Africa - E. Dartevelle

Notes on some recently recognized types in the British Museum

(Natural History)- G.L. Wilkins

A sinistral *Viviparus viviparus* (L.)- A.G. Davis

A note on the distribution of *Anodonta cygnea* (L.) having regard to differences in sex and gill structure, III H.H. Bloomer.

The Shells of Painswick: bibliographical note-A.G. Davis

A giant East African *Achatina*- T. Pain

Helix pomatia L. at Carshalton, Surrey- G.I. Crawford

Revista De La Sociedad Malacologica " Carlos De La Torre"- Vol.9

Num.1, Dec.10,1952. Papers contained are:

A new subgenus and species of *Cerion*, by P. Bartsch

Morfologia vs. anatomia interna, por C.G. Aguayo.

This is a very interesting and well written paper on the subject discussed in Minutes No. 122- the value of internal anatomy vs. shell characters alone in the classification of mollusks. Dr. Aguayo mentions the Minutes and with examples cited shows the value of both methods. The use of the radulae, sexual parts etc. are mentioned with the obvious inference that all characters possible should be considered in classification. Those interested should by all means read this paper.

Cantharis mollis (Gould) By William J. Clench. This is an interesting note and figure of this unfigured Japanese shell. It does not seem to be recognized by any of the recent catalogues of shells from Japan.

Notas Sobre *Scaphella* (*Aurinia*) *atlantis* Clench De Cuba Por Alfredo de la Torre.

Datos Sobre Los Moluscos Del " Cafetal Fundador De Canimar" En Matanzas y Sobre La Llegada A Cuba, En 1839, De Los Sabios Alemanes Gundlach, Pfeiffer y Otto. Por Alfredo de la Torre.

Change in Genus for *Polygyra pasonis*, por R.J. Drake- now *Ashmunella pasonis* (Drake). Dr. Wendell O. Gregg will publish on the anatomy. Nuevo Genero y Nueva Especie Del Genero *Fissurella* Por Isabel Perez Farfante

Posicion Generica De *Chama* Cubana - C.G. Aguayo

Nueva Subespecies De *Cerion* De La Costa De Matanzas Por C.G. Aguayo y Alfredo de la Torre.

Those interested in receiving this excellent periodical should write to Dr. C.G. Aguayo or to Dr. M.L. Jaime, Dept. de Moluscos, Museo Poey- Universidad de la Habana, Cuba.

Memorias de la Sociedad Cubana De Historia Natural- Vol. XXI, Num.2, Enero,1953. Obviously this publication is devoted to general natural history containing a great many papers of great value on ichthyology, botany, herpetology and other subjects, but it does also frequently contain very valuable papers on conchology. This issue contains Tres nuevas formas de Moluscos del genero *Liguus*, por A. de la Torre.

Those interested in this publication should write Dr. C.G. Aguayo Universidad De La Habana, Cuba. The publication is the official organ of Museo Poey, Facultad De Ciencias.

Correspondentieblad Van De Nederlandse Malacologische Vereniging. Nr. 47 Dec. 1952

Basteria- Tijdschrift Van De Nederlandse Malacologische Vereniging Vol. 16, No. 4, 1-XII, 1952. Papers contained:
 W.J. Van Der Burg: Over enige tot nu toe uit Middenplioceen van Nederland onbekende molluskensoorten 2
 Edm. Dartevelle: *Schafina fulica hamillei* Petit du Congo belge
 A.F. Malder on H. De Vuyst: *Odostomia scalaris* Macgillvary autochthoon verzameld in de haven van Vlissingen
 J.H. Stock: On a semi-parasitic Copepod from a Dutch nudibranch.
 Bernard Verdcourt: The Family Endodontidae (Mollusca, Gastropoda) in East Africa

Venus- The Japanese Journal of Malacology Vol. 17 No. 2 Dec. 1952
 Published by the Malacological Society of Japan- In Japanese and English languages- Papers contained:
 A New Remarkable Turrid Genus *Pionotoma* from the Japanese Deep Sea
 By Tokubei Kuroda
 Descriptions of New Genera and Species of the Shell-bearing Opisthobranchiate Molluscs from Japan (Cephalaspidea, Tectibranchia) By Tadashige Habe
 Record of an Ascoglossan Mollusk *Oxynoe viridis* (Pease) from Sagami Bay, Japan By Kikuzo Baba
 A History of Japanese Ichthyology By Tazima Kanamaru
 Systematic Relative Growth in Molluscan Shells (1) Land Shells By Ikuso Hanai
 On the Relative Growth of a Pond-Snail, *Cipangopaludina malleata* (Reeve) By Jun Miyazaki.

Auckland Museum Conchology Club Bulletin No. 8, Nov., 1952- Papers:-
 Shells From Fish By E.G. Williams
 Stewart Island Mollusca- Additions to the 1939 List of Powell
 By E.K.A. Smith
Notoplax cuneata (Suter) -Some further reports By A.K. Hipkins
Austrosuccinea archeyi (Powell) At Mount Maunganui By William P. Thomson
 Varices On Cassids By W.J. Paul
 Recent Fossils- From Wellington Harbour By R.V. Roberts
Ellatrinia memorata By K.P. Watene
 Collecting *Lingula* in the Fiji Islands By E.N. Gardner
Neothais smithii (Brazier) 1899 And some further notes By E. Richardson
 Pronunciation of Latin Names By J.E. Rosenbaum
 This is now a very well arranged printed periodical. We may well envy them their printer.

On the evolution of the so-called thalassoid molluscs of Lake Tanganyika By Bengt Hubendick- Archiv. For Zoologi-Stockholm 1952
 This is an exceedingly interesting paper. The great age and the large number of endemic species involved make this important.

Veloplacenta, a new genus of prosobranchiate Mollusca By Bengt Hubendick- Arkiv. For Zoologi, Stockholm, 1952

Note on genus *Fluviopupa*, with Descriptions of Two New Species By Bengt Hubendick- Occ. Paps. Bernice P. Bishop Museum, Vol. XX No. 16, March 17, 1952

Two New Opisthobranch Mollusks from the Gulf of Mexico-Belonging to the Genera *Pleurobranchaea* and *Polycera* By R. Tucker Abbott- Florida State University Studies- No. 7, pp 1-7, Oct. 15, 1952

On the Mollusk Fauna of the Land-Locked Waters of Bermuda By Fritz Haas. Fieldiana-Zoology Vol 34, No.8, Dec. 18, 1952

South American Non-Marine Shells: Further Remarks and Descriptions By Fritz Haas Fieldiana-Zoology Vol.34, No.9, Dec. 29, 1952

An interesting paper of 26 pages and well illustrated with 26 figures .

A New brackish water gastropod from Texas (Amnicolidae:Littoridina) By R.T. Abbott and H.S. Ladd- From Journal of Washington Academy of Sciences, Vol.41, No.10, Oct.15, 1951.

Illustrated Catalogue of Japanese Shells -Edited by Dr. Tokubei Kuroda- The importance of this work continues to increase-

No. 19- Ficidae in Japan by Tokubei Kuroda and Tadashige Habe- 1 pl. 5 figs.

No.20- Atyidae in Japan by Tadashige Habe Nov.30, 1952 16pp 2 pls. 32 figs.

No.21- Lyonsiidae, Poromyidae, Arctiidae, and Gaimardiidae in Japan by Tadashige Habe 6 pp 1 pl. 24 figs

No.22- Astartidae, Crassatellitidae, Mesodesmatidae and Laternulidae by Tadashige Habe 10 pps. 2 pls.

Parasitic Gastropods Found in Echinoderms from Japan By Tadashige Habe- Publ. Seto Mar. Biol. Lab. II (2), 1952 13pp 1 pl.

An excellent paper for those interested in this group from any locality.

It never fails to amuse me to pick up the Fisheries Newsletter from Australia and note the statistics on the Scallop Catch. Sure it seems to be down now to a mere 145 tons- average catch pr dredge 3,707. And yet the shells of these scallops are comparatively rare and hard to get by collectors in this country. They must have to dump the shells by countless thousands.

Circulares Del Museo y Biblioteca De Malacologia De La Habana-

This periodical is mimeographed , contains a vast amount of very interesting news, some quite valuable papers, and should be in all conchological libraries along with the other excellent publications from Cuba. These may be obtained by writing Dr. M.L. Jaume, 13 No. 351, Vedado, Habana, Cuba. \$1.50 for 100 pages

The Conchological Club of Southern California held a very successful field trip , Sat., Feb. 14. There was a very deep minus tide in the afternoon. Over 40 collectors attended and collected under the leadership of Harry Turver. All brought their own lunches but the club served coffee. They visited the beach at Doheny Park south of Laguna Beach. Collecting was fine all said, some really good shells were taken and all got their share. Of course, some said that there was a collector on every rock. But all who attended reported a very enjoyable occasion. We should have these more often.

We recently had some discussion at the club re Turritella gonostoma vs. T. broderipiana. A brief note from Dr. Leo G. Hertlein follows on this problem- " The oldest name for the common Turritella from Mexican waters is Turritella gonostoma Valenciennes, 1833. It is an exceedingly variable species. It usually has spiral ribbing (See Merriam, pl.36, fig.3) but grades into nearly smooth forms. The smooth form is broderipiana d'Orbigny, 1840 (See Merriam Pl.36, fig.4)

MINUTES 127

MARCH-APRIL 1953

CONCHOLOGICAL
CLUB OF SOUTHERN
CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.,
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax. 3-5710
Home- Ax 2-7965

The American Malacological Union Pacific Division will meet
at the Asilomar, Pacific Grove, California on June 12 and 13.

The American Malacological Union will meet at Lawrence, Kansas

A number of other important meetings will be held in June.
The AAAS will meet in Santa Barbara, Calif. June 15-20.
The Society of Systematic Zoology, Pacific Division will meet
with the AAAS the morning and afternoon of Friday, June 19.

MINUTES OF THE CONCHOLOGICAL
CLUB OF SOUTHERN CALIFORNIA

March 3, 1953

The president, Mrs. Harry Turver, called the meeting to order at 7:30 P.M., and welcomed 23 members.

The minutes of Feb. 3rd were read and approved.

The secretary read a letter to Dr. Jean Delacour, Director of the L.A. County Museum, in appreciation of the privilege of holding our monthly meeting at the museum, and his response saying " Mr. George Kanakoff has been appointed to fulfill the function as our sponsor, and calling our attention to the general rules". The appointment secretary of the Division of Education is to be placed on the mailing list of the organization to receive notices of meetings.

A letter was read from Mr. J. Janse, Stationstr 21E, Alphen a.d. Rijn, Netherlands who wishes to exchange fossil shells of Europe for other shells either Recent or fossil.

The following committees reported.

Nomenclature- John Q. Burch discussed Mitra belcheri and others that will be mentioned elsewhere in the Minutes.

Membership- W.O. Gregg reported.

Education- H.R. Hill, A.D. Howard and Mrs. Elsie Chace reported.

The Education committee was requested to give a 10 minute talk at each meeting.

Field- Mr. Harry Turver reported. The recent field trip discussed.

Cabinet- Mr. Besson reported.

Mrs. Harry Turver passed around a very fine display of crabs, echinoderms etc. from West Mexico.

Mr. Morris Schick made a very interesting talk on the interior construction of Conus and illustrated his talk with some very remarkable exhibits. Mr. Schick is also a lapidarist which accounts for his fine exhibit of large cone shells neatly cut to show all parts without chipping them in any way.

Mr. E.P. Chace then gave a very well prepared talk on Martyn's Universal Conchologist. He had two copies to show us, his own copy and another, the property of Miss Ruth Coats. It seems clear that apparently no two of Martyn's work are identical.

Meeting adjourned for informal talks.

Mrs. John Q. Burch- Secretary

Add Short Conversations- (San Francisco paper) " Yesterday, in John Saxby's curio shop on Fisherman's Wharf, a tourist from Chicago complained: " Y'know, there are so many smells around here that I'm losing my taste for fish." ... Smiled Saxby: " And do the smells around the Chicago stockyard make you lose your taste for steak."

Mr. and Mrs. Arthur C. Price- New address 1255 N. Mansfield Ave., Hollywood 28. We all sympathize with our member in his tragedy. A fire destroyed most of his property and his collection.

I M P O R T A N T N O T I C E

Those who plan to present a paper at the meeting of the American Malacological Union, Pacific Division, on June 12th and 13th at Asilomar, Pacific Grove, California, please fill out this form and return to Miss Ruth E. Coats, Rt. 1, Box 3200, Carlsbad, California, as soon as possible.

Name
 Address
 Title of Paper
 Time Required
 Equipment Required

Blackboard
 Projector, 2 x 2 slides
 Projector, Lantern Slides
 Projector, Opaque
 Projector, Movie (8 mm or 16 mm)
 Projector, Sound
 Tape Recorder

COMMENTS (If you prefer any special time or day, please state)

AMERICAN MALACOLOGICAL UNION - PACIFIC DIVISION
Sixth Annual Meeting - June 12 - 14, 1953

PLACE: The Asilomar Conference Grounds - at Pacific Grove, will be the site of our Sixth Annual Meeting. Arrangements have been made for us to be housed and to hold our meetings in the Scripps Building, where we will assemble on Thursday evening in time for Dinner (6 p.m.) The evening to be spent renewing acquaintances and perhaps planning a collecting trip to the nearby shores.

PROGRAM: Will start promptly at 9:30 A.M. Friday and will continue throughout the day and evening, to reconvene on Saturday and climax with the Annual Banquet on Saturday evening, leaving Sunday free for collecting and traveling home. (Those so desiring will have ample time to drive to the AAAS meeting in Santa Barbara.)

PAPERS: In order to give each member (who so desires) an opportunity to present a paper at the meeting, it is hoped that papers will be held to a 20 minute time limit - but not to exceed 30 minutes. Ruth Coates, 3846 Skyline Road, Carlsbad, California, is program chairman, and those wishing to present papers please advise her - as soon as possible; giving Title of Paper and needed equipment.

BANQUET: The Annual Banquet will be the final event of our meeting. Under the able direction of A. Myra Keen and her committee - a long-to-be-remembered evening is planned.

COLLECTING TIDES: Good low tides offer collecting opportunities. For further information contact Merton Hinshaw, address below.* Those desiring to bring specimens for display or trade are urged to do so.

RATES: (American plan) includes all meals - starting with Dinner on Thursday and concludes with Breakfast on Sunday. Both Single and Double accommodations are available....in the Scripps Building for \$ 20.25. When this building is filled, the overflow will be housed in the Lodge - the rate there is \$ 18.00. (Prices are per person). Meal rates for guests and those sleeping outside the Asilomar Grounds are - Breakfast...90¢; Lunch...\$ 1.10; Dinner...\$ 1.75; Banquet at \$2.25. Persons not planning to stay at Asilomar should notify Merton Hinshaw* of their plans.

REGISTRATION: Thursday evening and Friday morning (from 9 to 9:30 a.m.) The 50¢ fee covers attendance at any or all meetings.

RESERVATIONS: Make as soon as possible with Merton Hinshaw* Pacific Grove Museum, Pacific Grove, California.

For other information: Ralph O. Fox, Secretary-Treasurer
1048 Monterey Ave., Berkeley 7, Calif.
Phone Landscape 6-1849

ASILOMAR CONFERENCE GROUNDS---PACIFIC GROVE
June 12-14, 1953



CONCHIOLOGICAL CLUB OF SOUTHERN CALIFORNIA FIELD TRIP
Doheny Park, Orange Co., Calif. Feb. 14th 1953
Tide -1.2 (3:43 p.m.)

Species collected by E. P. Chace, unless followed by *
(Mostly collected from the big flat rubble-reef in front of the Picnic area.)

GASTEROPODA

Olivella biplicata Sby	Murex festivus *
Haminoea virescens Sby	" trialatus *
Acmaea inessa Hds	" gemma Sby
" limatula, Cpr	Purpura nuttallii *
" paleacae Gld	Lacuna sp.
" asmi Midd	Amphissa Sp.
Ocenebra poulsoni Cpr	Crepidula lingulata Gld
Tegula ligulata Menke	" onyx Sby
" aureotincta Fbs	Norrisia norrisii Sby
" gallina Fbs	Astraea undosa Wood
Pseudomelatomia moesta Cpr	Macron lividus A Ad
Crepidula perforans Val	Fissurella volcano Rve
Marginella californica Tomlin	Homalopoma baculum

PELECYPODA

Pseudochama exogyra	Chama exogyra
Semele decisa Conr	Corbula luteola Cpr (1 valve)
Kellia laperousii	Lithophagus plumula Hanley
Gari californicus Conr (fragments)	Cryptomya californica Conr
Chione undatella (1 pr. valves)	Tarus orbellus Gld
" succincta (1 pr. valves)	Macra nasuta Gld
Venerupis staminea (1 pr. valves)	

CHITONS

Ischnochiton conspicua Cpr (common)	Mopalia muscosa (small but good)
" californiensis Berry	" acuta Cpr (1 specimen)
Lepidochiton hartwegii	Lepidoplaurus (cf. rugatus Cpr)
" keepiana Berry	

News Item* Rare shell suddenly plentiful in Carolina- Nags Head, N.C. (UP)- The paper nautilus, one of the rarest types of sea shell, has suddenly appeared in relatively large quantities along the beaches here. Mrs. Nellie Bridgen found a perfect specimen measuring 18 inches in circumference. The largest number of the rare shells has been found by Mr. and Mrs. Jess Newman, professional collectors. They've found more than a dozen recently, and one of their perfect specimens was attached to a small Octopus that had been washed upon the beach.

* Note* No doubt the Octopus in the news was the animal of the Argonauta.

The above note was sent in by Mrs. Helen Van Duzee of Oakland.

Mrs. Margaret Teskey wrote on April 1 that she was just winding up an extensive trip with her husband. She visited the Academy in Philadelphia, the National Museum in Washington, met Dr. Jeanne Schwengel on the trip. Reports that everybody seems to be planning to go to Kansas in June.

NEW PUBLICATIONS RECEIVED

A Handbook of Illustrated Fossils from Japanese and Adjacent Territories- by Dr. T. Shikama, a professor of Yokohama College and an authority on the fossils of Japan. The contents of the book are- The territories where the fossils illustrated were found are Japan, Korea, Sakhalin, Manchuria, Northern China, Formosa and Micronesian islands. (1) Geological classification of the nature of the soil of the Far East is shown in tables (2) Each class of fossil and its corresponding soil is shown in Ikebe's notation (3) About 900 photos of TYPE SPECIMENS of various fossils are given with their corresponding scientific names, group names, geological names of soils and ages etc. (4) The fossils obtainable in the Far East are explained by grouping them.

* This is a well bound cloth book of 376 pages and a vast number of illustrations. Of course, it is largely in the Japanese language other than the scientific names throughout.

The book is now available from John Q. Burch for \$5.00

Check List of Japanese Tertiary Marine Mollusca by Kotori Hatai and Syozo Nisiyama. The Science Reports of the Tohoku University, Sendai, Japan Second Series (Geology) Special Volume No. 3. 1952

This is a very complete work, large octavo in 464 pages

Common Marine Bivalves of California by John E. Fitch. State of California, Department of Fish and Game, Marine Fisheries Branch, Fish Bulletin No. 90.

102 pages, 61 photographic illustrations and a frontpiece in full color of our Conchological Club emblem, the *Pecten diegensis*. This seems to be a very thorough study- Contains discussions of the life histories etc., a Glossary of Technical Terms, and a plate of Illustrated Terminology. A lengthy key to genera and species is given, list of the common and scientific names.

* Note* This always interests me because in every list of common names I have ever seen I discover names that have never at any time been mentioned to me before. " Weathervane Scallop" for one. Since some people insist on having a common name for everything I often wonder if the authors do not simply get a name out of their hats at times.

The following statements will change the present accepted usage so please note-

Crassostrea gigas (Thunberg 1795). * The generic or perhaps better according to your inclination subgeneric name of this species has been placed under several. Mr. Fitch calls it Crassostrea, and we sincerely hope that this is accepted. It should also be mentioned that numerous authors have insisted that the correct specific name of this species is O. lapereusii Schrenck. Mr. Fitch states that this is error. I am changing my labels to follow Mr. Fitch and hope they will stay put for awhile at least.

Hinnites multirugosus Gale 1928. I wish that Mr. Fitch had stated just why he rejected Gray's name "Hinnites giganteus Gray, 1825" Originally Gale rejected the entire genus Hinnites accepting in error a genotype of Pecten that must have been Hinnites, and so renamed Gray's species a Pecten multirugosus. This was without exception rejected. It seemed to be entirely dependent upon the validity of the long discarded Pecten adscensionis Osbeck. Inasmuch as this is not the accepted genotype of Pecten, we wonder what is wrong with Gray's name for the species.

Pododesmus cepio (Gray 1849)- This is interesting indeed. Mr. Fitch states that the northern species is P. macroschismus and the southern species which we have is the above species. There is no indication even in the key as to what difference there is between the north and the south, nor where we start to find Pododesmus macroschisma (Deshayes). Out of curiosity I have before me a large box of several hundreds from Puget Sound and some to the northward and another box of as many from Haliotis off Monterey. These may be different but I would like to know in what particular in case one gets out of one box into the other. They all look alike to my eye after a close study.

Now about the specific name of this genus. We left that up to our Latin and Greek scholars before. Naturally we all have the inclination to consider all generic names of Latin origin and make the specific names correspond in gender. And I must say for the sake of sanity that that should be the rule. However, it seems that our linguists have all been consistently using the feminine after Pododesmus on the theory that it is of Greek derivation. I am sure that we have all had the inclination to change Pododesmus macroschisma to P. macroschismus. However, this does not seem to be the correct usage. So if we are to accept P. cepio (Gray) it would seem that we should call it P. cepia (Gray). In this connection I check back in the Minutes to come up with the following along with others- a note from Dr. A. Myra Keen " For the past several years I have been plumping for the spelling macroschismus, but after a restudy of the derivation, I concede that macroschisma is probably right". Now lets hear from the Greek and Latin scholars again.

Venus mercenaria Linnaeus 1758. Mr. Fitch mentions a bed of these in Humboldt Bay and in his article notes that it might be the long lost Venus kennicotti (Dall 1871). Mr. Fitch is disposed to think it is the result of an importation which sounds logical even if not as interesting as a rediscovery of Dall's legendary species.

In all this is a valuable booklet that all California collectors will wish to have. It is to be wished that Mr. Fitch would continue his work and publish as thorough a work on the many other species of the coast. A vast number of our puzzlers are simply not mentioned. Three species of Ostrea are mentioned, whereas most of us are still trying to get a number of others straightened out. The same may be said of many other genera.

Forty-Second Biennial Report of the Department of Fish and Game for the years 1950-52. A number of interesting notices about mollusks. Figures showing the growth of the large Pacific oyster from seem six months, 18 months, 30 months. Articles and a plate on the Pismo Clam etc.

The Commercial Fish Catch of California for the year 1951- It is downright amazing to read that 1,287,724 pounds of Pismo Clams were taken in this one year- Hey I was only looking at the Santa Barbara region. The total was 2,064,924 lbs.

Los Nuevos Moluscos De La Region Oriental De Cuba por Carlos G. Aguayo y Alberto R. Quinones Torreis March 2, 1953
Nuevos Moluscos Cubanos Del Genero Cernion por William J. Clench y Carlos G. Aguayo Torreia Feb. 2, 1953

Puget Sound Oyster Bulletin- Feb. 24, 1953 10pp 5 charts-

The Nassariidae of the West Coast of North America between Cape San Lucas, Lower California, and Cape Flattery, Washington by Joan Demond- Pacific Science, October, 1952

This is an excellent paper and it is hoped that copies of it will be available to all who wish them. Pacific Science is found in far too few libraries to make this work readily available.

An excellent discussion of the life history, habits, behavior etc. is given. The key to species is clear and usable. A few notes on the species follow.

Nassarius californianus (Conrad)- The entire case for this name is well stated. There has been so much confusion regarding this name that it is regrettable that Miss Demond did not attempt to settle it by giving it a new name. There is no question about the species we know as N. californianus, but great question whether Conrad's fossil is the same species. Of course, it is a long story with other names involved, all of questionable application.

Nassarius cerritensis (Arnold)- This is a common fossil species and particularly abundant in the Baldwin Hills Pleistocene. While working on this deposit a number of new species were described not then known to be living Recent but have since been taken from farther south. An example of these might be Epitonium clarki etc. We expected this species to be found living but the author here mentions that she has been unable to find any record of the species Recent. It would be interesting if anyone has taken it living.

The discussion of the West Mexican species is of particular value due to the lack of any work on this fauna other than the widely scattered papers.

* A note from the author of the above paper follows.

" At present I am compiling a bibliography of marine molluscs of the Indo-Pacific. If you care to suggest any references, I shall appreciate receiving them."

Die Verbreitung von Cepaea nemoralis interrupta und anderer Binnen-mollusken im sudwestlichen Ostseegebiet in Beziehung zur Kontinentalzeit by Von Hans Schlesch- Archiv, fur Molluskenkunde, Band 81

On An Interesting New Genus of Gastropod Mollusca From the Sea of Kii Peninsula by Tokubei Kuroda- Publ. Seto Mar. Biol. Lab. II (2), 1952. An interesting paper in English. A new genus Ceratoxancus and a new species of the family Xancidae.

Los Angeles Times- Mar. 1, 1953, " Australians Will Welcome Japanese Pearler's Return". This is a long and interesting article on the pearl beds of Western Australia centered at Broome. A great deal of increased activity is expected. Of course, it is always difficult to interest a pearler in collecting specimen sea shells. The truth is that it is obviously not financially profitable to them to spend time other than their regular business. However, occasionally some of them become interested and collect them for that reason and many of the finest and rarest shells I have ever handled came from such pearlmen.

INTERESTING LETTER FROM ANDREW SORENSEN
247 Granite St., Pacific Grove, Calif.

Dear John:

In the last issue of the "Minutes" you speak of receiving several good specimens of the rare *Miter belcheri* from La Paz. The records don't show that they are plentiful anywhere. In January of 1948 I found a badly worn specimen on the El Cochorre beach some 10 miles south of Guaymas, Mexico. I sent it to the U.S. National Museum, and when Dr. Rehder wrote that they did not have any I gave it to them. The next year I found a similar one. Then I learned that the Stanford University collection contained only one specimen, presumably purchased in London, and that Herbert Lowe who collected for several years from Punta Penasco to Panama did not find a single one. However, this February, while at Guaymas, I secured, through the courtesy of Mr. and Mrs. Paul Page a perfect specimen, one of three found at Mazatlan. The measurements of my shell are: Length, 120 m.m. and diameter, 35 m.m.

While speaking of miters it may be well to mention another rare Mexican specimen--*Mitra nobilis*. After my return from Guaymas in February 1942 I received a letter from Dr. Paul Bartsch asking me to verify if possible that an early expedition had found a *M. nobilis* at Guaymas and that Herbert Lowe had also found one there. Mr. & Mrs. H. R. Turver had been with me on that trip so Mrs. Turver wrote that she had found two badly worn ones. She gave one to Dr. Bartsch. That made four known ones. In February 1951 a fairly good specimen was found on El Cochorre beach. In January 1952 a live one was found near the same place. This record of six stood until this spring when Wm. Labato got a good *nobilis* and Mrs. Walter Banka found two. These were taken outside of the entrance to Esterro Soldado, which is nearly twenty miles from where the others were found. These nine are all I have been able to learn about. It seems reasonable to believe that *M. nobilis* lives in fairly deep water with a rocky bottom, otherwise so many would not be broken when washed up on a sandy beach.

The two miters are about the same size, but whereas *nobilis* is white and has a smooth surface, *belcheri* is black and has a corrugated surface.

I thought this might be of interest to you.

A RECENT NEWSPAPER CLIPPING

Dr. K. P. Rao, a UCLA marine zoologist from India, has discovered that clams lead a faster life at high tide and in northern waters. His research concerns the "living rate" of the clam's efficiency in making prompt use of elements taken in by the animal. Dr. Rao suspects the clams become conditioned to water pressure due to the tides and that this response continues regardless of environment. The northern clams not only live faster but also have thicker shells than the southern ones. They take in calcium, much of which is deposited in the shell, directly from sea water. It is known that charged particles of atoms are more available in cold water than in warm water.

MINUTES 123

MAY-JUNE 1953

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The American Malacological Union- Pacific Division-
Sixth Annual Meeting- Jun2 12-14, 1953

Place: The Asilomar Conference Grounds- at Pacific Grove.

Program: Will start promptly at 9:30 A.M. Friday and will continue
throughout the day and evening.

Rates: (American Plan) includes all meals- starting with Dinner
on Thursday and concludes with Breakfast on Sunday. Both single
and double accommodations are available... in the Scripps Building
for \$20.25. When the building is filled, the overflow will be
housed in the Lodge- the rate there is \$18.00. (Prices are per
person). Meal rates for guests and those sleeping outside the
Asilomar Grounds are- Breakfast...90¢; Lunch...\$1.10; Dinner \$1.75
Banquet...\$2.25.

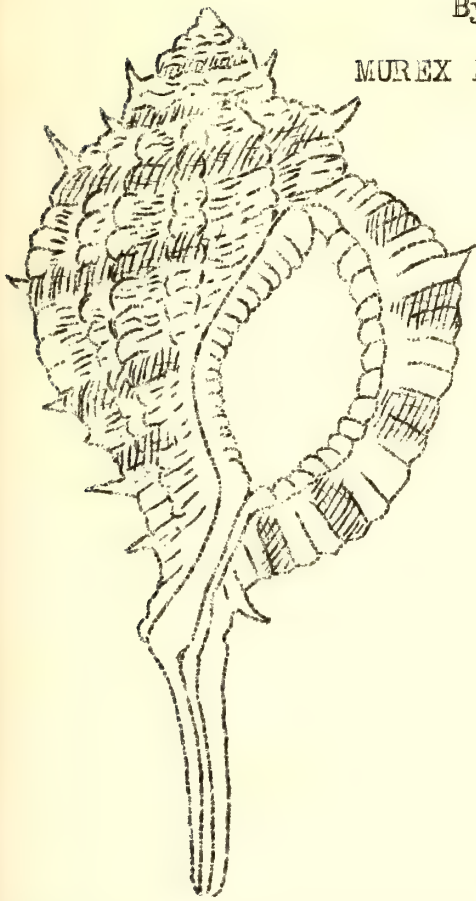
Persons planning to stay at the Asilomar should notify Merton
Hinshaw, Pacific Grove Museum, Pacific Grove, Calif.

American Malacological Union- Nineteenth Annual Meeting
University of Kansas, Lawrence, Kansas. June 25, 26, 27, 1953

A NEW MUREX FROM THE WEST INDIES

By A. Hyatt Verrill

MUREX BRISKASI - (New Species)



Description: Length 35 to 45 mm.

Diameter 20 to 28 mm. - Whorls 6.

Ground color rich chocolate brown, lighter on varices, with three broad bands of deeper brown on last whorl and two on each of the other whorls. Spire higher and more sharply pointed than in

M. chrysostoma. Aperture small, not parallel with axis of shell, elliptical.

Interior of aperture, lip and column tinged with pale lilac. A deep notch at junction of lip with body whorl. Inner

edge of lip strongly crenulated or "toothed", the ends producing a crenulated edge to the lip. Inner surface of column with numerous conspicuous ridges. Canal of moderate length, the two sides of equal width, strongly bent to left as far as end of body whorl, then straight and curved sharply upward. Color of canal brown shading to horn color and white at tip. Each whorl with three large varices, rounded and each with a single short, sharp spine near upper portion, and with a somewhat longer spine on each varice near its posterior end, (in some specimens a second smaller spine below the other.) Two to four axial nodular ridges between varices. Spiral sculpture very faint except on the varices. -- Named in honor of

Mr. James Briskas, the well known collector of Fort Lauderdale, Fla.

Five specimens from Dominica, B.W.I. in 75 to 100 fathoms.

MINUTES OF THE CONCHOLOGICAL
CLUB OF SOUTHERN CALIFORNIA.

The president Mrs. Harry Turner, called the meeting to order at 7:30 P.M., April 7, 1953, and welcomed members and guests at the Los Angeles County Museum.

The minutes of March 3rd were read and approved.

Nomenclature Chairman Mr. John Q. Burch reported: State of Calif., Dept. of Fish & Game, Marine Fisheries Branch: Fish Bulletin #90 - "Common Marine Bivalves of California. This is a valuable book. We will have these to give each member with the Department's compliments. Reviewed also: The Nassariidae of West Coast of North America, between Cape San Lucas, Lower Calif., and Cape Flattery, Washington by Joan Demond. This paper will greatly assist all who are studying the Nassariidae.

Mr. Harry Turver introduced the speakers of the evening: Mr. E. C. Allison of the Standard Oil Co., of Calif., whose subject "Stratigraphy of the Cretaceous fossils of Puerto Santo Tomas de Baja California; and Mr. George Kanakoff of the Los Angeles Museum, who spoke on "Index Molluscan fossils". The talks were well illustrated with material. We feel certain that we will understand a bit of what is meant when an index fossil is mentioned hereafter.

The President announced that the person bringing the most interesting shell during the year would be awarded a prize. Mr. Burch and Mr. Turver were named as judges.

The meeting was adjourned at 9:45 to study specimens exhibited by Mr. Allison and Mr. Kanakoff.

--- Mrs. John Q. Burch, Secretary

MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA-May 5, 1953

The meeting was called to order by Miss Ruth E. Coats, Vice-president, in the absence of the president, Mrs. Harry Turver, who with her husband, is vacationing at Punta Bandasco, Sonora, Mexico

The treasurer, Miss Bessie Falconer, reported forty nine member-ships paid for the year 1953, and a cash balance of \$43.34 on hand.

The Secretary extended greetings from the H. Arden Edwards, of the Antelope Valley Museum, where she was one of forty guests Sunday, May 3rd.

Mr. Burch reported on the latest issue of Johnsonia, and Mrs. Chace spoke on the latest paper of S. Stillman Berry.

Membership chairman, Dr. W.O. Gregg, spoke of his first visit to the Conchological Club years ago which was held at the Southwest Museum. He continued to attend and eventually became a member. Dr. Gregg suggested that any visitor wishing to become a member should feel free to announce his desires. Visitors were introduced.

Dr. Hill, Education Chairman, introduced Mrs. E.P. Chace who gave a lesson on type terms; a copy of these terms was given to each person present. Mrs. Chace was given a vote of thanks for this instructive lesson.

Mrs. Harry Turver extended through Miss Coats, an invitation to a pot-luck dinner June 21 at 1:30 at 8640 Evergreen Ave., South Gate. It was moved by Dr. Hill and seconded that we accept this gracious invitation.

It was moved by Mr. Burch that the secretary be instructed to send in the name of the Conchological Club of Southern California for membership in the American Malacological Union. This motion was seconded and carried.

Program for June: Labelling Shells by Mr. Gilbert Grau, and Cleaning Shells by Mr. E.P. Chace.

Miss Coats was introduced as speaker of the evening. She gave a most interesting account of her trip to the Territory of Hawaii, which was illustrated with excellent motion pictures, and with many fine specimens of Hawaiian shells.

Before the meeting adjourned at 9:45 the Secretary gave to each member present with the compliments of the California Department of Fish and Game, Marine Fisheries Branch, their Bulletin #90: "Common Marine Bivalves of California".

Mrs. John Q. Burch- Secretary

BOOK REVIEWS

This is probably an old story but as I heard it, a teacher gave a little girl an assignment to review Keep's West Coast Shells and her report was brief and to the point- " I find that Mr. Keep has a lot more to say about shells than I care to know."

When I started selling books I found myself handling a good many books on subjects of which my ignorance was almost perfect. So in order to feel competent to recommend a book to a customer I started very naturally reading the reviews of them. It did not take me long though to discover that some of the reviewers for example of a book on astronomy didn't know how many planets there are, but instead of being honest like the little girl they made a 'stab' at it. The result was that many 'dogs' not worth the ink were highly praised and other really good books were given a black eye because someone forgot to dot an i, or perhaps more likely because no free copy had been at hand. When reading a review especially of a scientific book it is wise to look and see whether or not it is a fish specialist reviewing a bird book etc. Some publishers have the habit of donating sample books to reviewers. This is naturally a very nice deal, books " For Free". Of course, few wish to murder the " Golden Goose" so the review sounds fine no matter how terrible it may be. It seems to be something that is seldom done but reason would indicate that a bird book should be reviewed by an ornithologist, snake book by a herpetologist etc.

In conclusion I am compelled to pay little attention to the published reviews, but now depend upon the verdict of one or more of my customers whom I know are competent judges in the particular field covered by the book.

John Q. Burch

David K. Baker

We were shocked and grieved to hear of the untimely death of David K. Baker of San Diego. It is doubtful if a more enthusiastic collector ever lived.

The Bakers had recently moved into their new home in San Diego and his pride for the landscaping and shrubery of his new home inadvertantly caused his death. In the use of arsenic insecticides he became poisoned. The doctors were puzzled for some time regarding the cause of his illness with the result that even after he was seriously suffering from arsenic poisoning he used the arsenic repeatedly increasing the effect. When the trouble was finally diagnosed it was too late as he failed to respond to the customary treatment for arsenic poisoning.

" Moro Bay oyster beds are closed after 15 poisoned"- headline in the Los Angeles Daily News, April 28- " Oysters Poison 15 Here" in the Los Angeles Herald and Express, April 28, 1953.

At least 15 persons were stricken by food poisoning after they ate oysters brought here from Moro Bay. Mr. and Mrs. Peter Salmonno and their daughter ,5, were at Morro Bay last Wednesday where they ate raw oysters and bought two bushels of the bivalves to give to their friends and relatives in Los Angeles. The little girl became ill on Thursday and the parents on Friday. The friends became ill shortly after they had eaten the oysters. Some of the victims were severely ill but are now out of danger. Tests are being made on the oysters now and state officials are investigating the Morro Bay oyster beds.

* Startling to some of us because I for one have often enjoyed a platter of Morro oysters. They are the big ones.

" Scientists Plant Oysters, Clams in Salton Sea and Hope for Best" is a headline in the Los Angeles Times, May 17, 1953.

Scientists of the California Department of Fish and Game are engaged in operation " ecological niche". Armed with two types of oysters, three kinds of clams and several types of mussels, marine biologists descended on Salton Sea, the other day.

Their aim is to study the reactions of environment in the Salton Sea as it applies to life from other salt water bodies, and if they are successful in growing the transplanted mollusks they will have succeeded in establishing a new ecological niche.

The experiment is already partially successful. Back in 1950 and in May of 1951, biologists of the Department of Fish and Game journeyed to San Felipe, Mexico, on the Gulf of California and brought several types of gulf fish, among them a small but delicious type known as the gulf croaker, to the Salton Sea.

About 100 of the gulf croakers were planted at that time. Seining operations conducted by researchers last year indicated that the croakers had increased into the thousands. This year, seine tests made at various sections of Salton Sea indicated that the croaker population of the below-sea-level salt water lake has increased probably into the hundreds of thousands.

Reports also indicate that some of the larger types of bass and Mexican corbina planted may also have survived, but no actual specimens have been caught.

Headed by Phil Douglas, associate fisheries biologist for the Department of Fish and Game with headquarters at Whittier, and by Dr. Harold G. Orcutt, marine biologist in charge of shell fish with headquarters at Stanford University, a group of marine biologists have just completed the planting of more than 12,000 Japanese seed oysters, shipped direct from Japan for the experiment; some 2500 Japanese littleneck clams taken from South San Francisco Bay; 2,000 native bay mussels, liber-chione clams, 1000 common California littleneck clams and mixed with native California oysters.

Clams and oyster seed brought from San Francisco and Palo Alto by Dr. Orcutt, were given special treatment en route. They were given a drink at Morro Bay and later at San Pedro.

Assisting Douglas and Orcutt were John Fitch and Park (Bud) Young, marine biologists at the Marine Laboratory at Terminal Island, who gathered bay mussels and other clams in the Anaheim Bay area.

Planting operations were made along the southern shore of the Salton Sea, some in areas where local developers can keep a close watch on the newly planted beds and determine whether the clams and other bivalves adapt themselves to conditions in that body of water.

Clams were mostly planted along sandy areas and near rocks where they will be partly protected from stormy weather and where they will have conditions similar to their own natural environment.

Oysters were sowed in areas where native conditions were evident, with some of them being hung in strings neneath docks and from special pilings. Mussels were placed in areas where rocks and other articles are at hand to which they may attach themselves and continue growth.

Shellfish will augment the supply of food for fish in the Salton Sea and will indicate that other types of fish may be planted there so that eventually the 37 mile long, 12 mile wide body of salt water may become a huge sportsman's paradise, Fish and Game men say.

Gulf croakers planted in 1950 and 1951 have a tremendous reproduction rate. Fish seined during the recent trip were filled with roe and ready to spawn, although they were known to be only 1 year old ffish.

The fish averaged from 6 to 10 inches in length and eventually will grow to between 12 and 18 inches, biologists say. Seining operations for specimens this year were confined to a small section of a channel just developed at Old Fish Springs, which is being developed as a racing boat headquarters by Bob Strain of Fullerton.

Common Names for Shells

The opinions of others on this much disputed matter will be sincerely appreciated. I have always discouraged the use of any and all common names, but I may be in error in this. The ornithologists seem to have done very well by publishing definite common names for the species. There can be no great objection, as I see it, if a list of common names were to be published as accepted by for example the American Malacological Union and the A.O.U. has done for the birds. Of course, as it is now one species may well have a dozen entirely different common names, and perhaps worse the fact that all species of an entire genus or even family will pass under the same common name even though there may be a host of species.

This matter came up during our discussion of the excellent booklet "Common Marine Bivalves of California" by John Fitch. I think I will quote an excerpt from one of my letters to Mr. Fitch "Now about those "Common Names". They are and always have been to me something a bit like the well known red flad to the Toro. I have on my desk at the moment a letter urgently asking me to send them a "Flamingo Tongue". I assure you that I haven't the faintest idea what they are talking about. We have no established common names as they have for birds for example and the result is confusion. But when they do use some of them it does simplify the matter no end for a dealer. The customer who calls with a demand for a "King Conch" makes it comparatively simple- I can sell him any one of exactly 7 species and he has his "King Conch".

...

Mr. Fitch's reply to this deserves some careful consideration because if it is inevitable that common names be used it would seem obvious that some effort should be made to bring a measure of order out of the present chaos.

"I believe that I fully realize the confusion caused by application or misapplication of common names. We in the Department of Fish and Game are almost constantly in contact with a portion of the public that uses the common names almost exclusively. To these people a scientific name means nothing and often the common names which they use are meaningless to us. Thus in our work it becomes necessary, to try at least, to standardize common names. Someone has to stick his neck out and put these "official" common names in usage. In this instance it was my neck which was stuck out and the names I used were applied only after long and careful deliberation by a considerable number of individuals. I fully realized that not everyone would be happy- the wardens for instance are particularly unhappy because I refuse to accept "cockles" for the littleneck clams and the chiones- but the job had to be done sometime. True, I feel now that the "warty piddock" would have been better than "wart necked piddock" but until a later date I can and will do nothing about it.

* Now for the question? Do you or do you not think that a check list of mollusks should include a list of common names as well as the correct Latin names?

Latin Grammar

It has been a great many years since I struggled with *arma virumque* etc. and most it long forgotten. I am also very sure that my professors even then predicted no great future for me as a Latin scholar (or perhaps anything else). When I try to unravel an old original Latin description I confess that my Latin dictionary gets well thumbed now.

However, there seems to be some confusion in the minds of some of our collectors. The specific name following the name of the genus is an adjectival name and according to the International Rules " must agree gramatically with the generic name". This is very generally understood I am sure. However, we have had a rash of changes in generic names in recent years with the result that many collectors have felt obliged to go through their collections changing the names on their labels. This is all very good if they know the gender of the new genus. As a rule the Latin word ending in us is masculine, in a feminine, in um etc. neuter. Typical examples might be Strombus galeatus , masculine followed by masculine, and Harpa crenata feminine followed by feminine, &

However, the trouble has entered by changing the name, for example just suppose that Harpa should have been changed to Venus . Some have been known in such a case to simply go through and make all specific names end in us to agree with the seeming masculine ending of Venus. Of course, Venus is a perfectly valid Latin name and it should hardly be necessary to consult the whiz kids about the gender of the Goddess of Love. The only suggestion is to be sure of the gender of the new genus before trying to adjust the specific names to correspond.

Still thinking about the above I recall another gimmick and for this I do not even have an idea, but some claim that all varietal names following var. should be feminine even if following a masculine genus and species on the theory that var. in Latin must be either varietas or varians. They claim varietas is feminine and should be followed by feminine. Result of this might be some such thing as Strombus galeatus var. alba if there were such a variety. If you are still aboard here fine. I went off at the first curve. The Latin scholars could have some great sessions about such as this one.

R.R. Talmadge- Willow Creek, Calif. " Just completed a talus slide check between Del Loma (French Creek) in Trinity Co. upstream to Junction City for land snails. Brought home a nice batch of the Monadenia churchi Hanna and Smith , and a few more of the Triodopsis lorricata sononaesis Hemphill. This last form is not typical, but has a wider umbilicus than normal. It is an odd thing, but from Soldier Bar Creek on up the Trinity no specimens were located. I had previously worked most of the streams and had only the slides to work, so covered quite a bit of territory. Still have the upper reaches of Canyon Creek and the North Fork of the Trinity to work, but will wait till much of the snow is gone.

We are preparing for a series of trips up the Klamath to the Scott starting next month. Dr. Berry described several forms from that region, and so far as I know, no additional specimens have been taken. In many cases the type lots consisted of single or at the most a mere handful of specimens. I hope to bring back the bacon (snails) if possible.

The first part of the paper discusses the general principles of the theory of the atom. It is shown that the atom is a system of particles which are in constant motion. The motion of the particles is determined by the forces acting on them. The forces are of two kinds: attractive and repulsive. The attractive forces are due to the electric and magnetic fields of the particles. The repulsive forces are due to the Pauli exclusion principle. The paper then goes on to discuss the structure of the atom. It is shown that the atom consists of a central nucleus and a surrounding cloud of electrons. The nucleus is made up of protons and neutrons. The electrons are in orbits around the nucleus. The paper then discusses the spectrum of the atom. It is shown that the spectrum is made up of discrete lines. The lines are due to the transitions of the electrons from one orbit to another. The paper then discusses the theory of the atom. It is shown that the theory of the atom is based on the principles of quantum mechanics. The paper then discusses the applications of the theory of the atom. It is shown that the theory of the atom has many applications in physics and chemistry.

Another letter from Bob Talmadge - May 23, 1953- " Over the week end of May 16-17 we were over in Siskiyou on the Klamath, Scott and Salmon. It was a rather productive trip, not in number of species or number of specimens, but the material that we gathered and the storm damage we examined, is filling in gaps on the Northern California snails.

We gathered topotypes of the Monadenia fidelis klamathica and M. f. ochraphalus, the M. f. scottiana (summer cottages and too much snow on the creek) but gathered some nice Monadenia callipeplus. If I am not mistaken this small batch probably is the second batch taken. It was rather interesting to have the three Trinity River forms and the other forms in a gallon jar to compare the living animals. We had the Monadenia churchi, setosa, callipeplus plus forms of fidelis (klamathica-ochraphalus) , Salmon River, Trinity River and Klamath River, all crawling around at the same time and side by side. The easiest way to tell the animals is that the fidelis range from pinkish to purplish, the churchi is tan, the setosa is grey purplish and the callipeplus is lead grey. We also located another colony of Helminthoglypta that may turn out to be hertliniana.

Up the Klamath, Scott and Salmon Rivers we found the same flood damage that was noted on the Trinity and Mid Klamath. This past winter was rather rough on our land mollusca, as we had a very heavy snow pack, then terrific rains washed most of the snow off within a few days. Each canyon was bank full, trees were swept away and entire mountains slid into the water. Several colonies of the local forms were swept nearly away, down the Trinity and into the Klamath. It may be several years before these colonies are built up again. It will be interesting to locate the snails that were swept down stream and see if they retain their identity or else will intergrade with others in the same genus. We had the same situation in 1927, and we are sure that this situation has happened many times before. This is probably the reason that there are so many color forms along the Klamath.

Note on Mitra belcheri Hinds- from Professor H.W. Miller, now of Cuba. " I was much interested in the discussion of Mitra belcheri Hinds in No. 127. I may as well chip in what little I know about it. In 1947 we found this species at Tambor, in Ballena Bay, on the lower end of Guanacaste Peninsula of West Costa Rica. As everywhere else it was not common, and the few we found (two or three) were so badly broken and beach worn that I only saved the one most nearly entire in order to be able to say I have a specimen. I can't give you any accurate measurements of size on it, as it is not all there. The only really common Mitra at Tambor at that time was M. attenuata, which, oddly enough, sometimes washed in onto the beach in quite good condition. I think any extensive dredging there ought to get live specimens of both. That was where I got the big M. attenuata I reported to the Society of the Lost Operculum. I do not remember having seen M. belcheri from anywhere farther south than Tambor. Walter Clark might know if it is found at Panama or not.

** Note- only comment is that common Mitra attenuata . I cant quite pass that along. Think I have had about three come my way and all are in our own collection. We usually do better with common ones. Maybe we didnt have the right connections.

Mr. Henry Dodge of Scarsdale, N.Y. spent the winter in Nassau, Bahamas, and writes " I have loafed all winter and only done a little collecting of the local land shells. Now I have a summer of work ahead of me working on part 3 of my book (Bulla and Voluta). Part 2 is completed (the cephalopod genera and Conus and Cypraea) , and will, God Willing, be published rhis fall."

Dr. G. Dallas Hanna, curator of paleontology, and Joseph R. Slevin, curator of herpetology, returned April 18 from a six week expedition aboard the research vessel Orca. The two curators were invited to participate in the expedition to collect marine zoological specimens by Joseph W. Sefton Jr., president of the Sefton Foundation which operate the Orca. Six scientists from Stanford University and one from the San Diego Zoological Society were also aboard. The 100 foot ship went from San Diego to Cape San Lucas, stopping at several bays on the way, and then up into the Gulf of California. The group left ship at Guaymas , where Hanna and Slevin were met by Alvin C. Gundred, Planetarium technician. There the first hitch in an otherwise trouble-free trip developed- two sun tanned scientists and at least a truck and one fourth load of specimens don't fit into one small station wagon. But, somehow, the impossible was accomplished, and reptiles, fossils, shells, minerals, insects, fishes, and mammals from both coasts of Baja California and the islands of the Gulf are now being distributed to appropriate departments at the California Academy of Sciences.

NEW PUBLICATIONS

Methods and Principles of Systematic Zoology by Ernst Mayr, E. Gorton Linsley, and Robert L. Usinger. New 1953 McGraw book \$6.00

I think that it is considered a bit extreme for a bookseller to pounce on a prospective customer and twist his arm to make him buy a book, but it is a temptation to do just this to any of my friends who are interested in systematic zoology because they need this book. It is good.

Catalogue of the Solaridae in the Rijksmuseum Van Natuurlijke Historie By Ch. Bayer- Leiden, Netherlands. We have three parts I. Solarium s.s., II Philippia, and III Torinia. 1940, 1942, 1948.

This is an excellent work and invaluable to the student working with this group. The synonymy of all species is given with many notes on the species, large bibliography etc.

One thing is perhaps to be wished and that is a more complete discussion of the reasons for disregarding the Roding name. This is, of course, an old story but it seems that it is about time to determine all such problems. Many authors continue to use Archetonica (Bolten) Roding 1798. I am one of them and wish to be corrected with reasons why I should use the later name Solarium Lamarck 1799 (non. cons.). It seems as if at least the vast majority of recent authors are now using Archetonica. Among them for example is the new Check List and Bibliography of Recent Marine Mollusca of Japan by Kuroda and Habe, Dr. Rehder of the U.S. National Museum, all of the Australian and New Zealand authors etc. It is true that Thiele uses Solarium placing the Roding name in the synonymy but without reasons for so doing. I propose to use Dr. Bayers work certainly but not to accept abandonment of Architectonica without another hearing.

Catalogue of the Genera *Melongena* and *Semifusus* by Ch. Bayer
Zoologische Mededelingen, 24 Sept., 1952

There has been a tendency to use the generic name *Galeodes* (Bolten) Roding which has been discarded because the name was used by Olivier in 1791 for an insect. This seems to be valid usage and the name *Melongena* Schumacher 1817 should be used.

This is an excellent work listing and discussing all species at length and giving a complete synonymy. The discussion of those from the Americas is very good. *M. melongena* (Linne) and *M. patula* (Broderip and Sowerby).

Johnsonia Vol. 2 No. 32- This issue is called the Review Number and completes Vol. 2. The index accompanies this issue. The Genus *Bankia* in the Western Atlantic- and additional new species of the other numbers are covered- *Murex*, *Epitonium*, *Conus*, *Scaphella* and *Aurinopsis*. The work is done with the customary thoroughness characteristic of Johnsonia. The plates are as usual-excellent.

Nuova revisione delle conchiglie marine di Sicilia- Memoria V- by Dott. Ing. Ottavio Priolo- Catania, 1953. Folio -

The species are given with extensive synonymy and bibliography. *Phasianellinae*- Genus *Tricolia*,... *Neritacea*.. *Smaragdia*- Family *Lucunidae*.. Genus *Benthonella*... *Littorina*...

A very thorough work on the groups covered.

Systematic Position of the Pelecypod *Euloxa* by David Nicole Journ Paleontologist Jan. 1953

A Rare Tertiary glycymerid from South Carolina and Florida by David Nicol- Journ. Wash. Acad. Sci. Nov. 1952

A Comparison of the Effects of Various Relaxing Agents on Slugs- by Frank P. Sivik- Turtlex News

Les Types de la Collection Lamarck au Museum de Geneve- Mollusques vivants IV - Rev. Suisse De Zool., Geneve, 1953 pp 131-204 by G. Mermoud- This is a continuation of this very valuable work with clear figures of the types as well as extensive discussion of them.

Xenophoridae, *Columbariidae* and *Caecidae* in Japan by Tadashige Habe. This is No. 23 of the series of the Illustrated Catalogue of Japanese shells. The series will be of tremendous value when completed although each number is complete on the genera covered. Of particular interest to me in this issue is the *Xenophoridae*, a group of Japanese shells that have had me puzzled with several specimens laid aside unclassified until this paper came along. The entire series is available. This issue 50¢.

The Australian Fisheries Newsletter has been carrying a number of articles on "The Shape of the Trawl in Action"- the last U.S. Experiments Confirm U.K. one... These discussions of trawls have been of great interest to me because of my own excellent results in the use of small trawls for collecting deep water shells. At least I found that a good trawl was far more productive on most deep bottoms than dredges. The idea is to follow all the data and information published on the large commercial trawls, then make yours perhaps 6 ft. instead of 42 etc. Of course, they are no good in rocks and have a few other shortcomings.

MINUTES 129

JULY 1953

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax. 3-5710
Home Ax 2-7965

The meeting of the A.M.U.P.D. held at the Asilomar, Pacific Grove, California is now history. The attendance was excellent with an interested group varying but including as many as 75. The many fine papers and other matters that came up for discussion will be mentioned in future issues of the Minutes.

Officers elected for the coming year are:
Chairman: Mrs. Elsie Chace
Vice-Chairman: Ralph Fox
Secretary-Treasurer: Miss Ruth Coats

MINUTES OF THE CONCHOLOGICAL
CLUB OF SOUTHERN CALIFORNIA.

The president, Mrs. Harry Turver, called the meeting to order at 7:35, June 2, 1953, and welcomed members and guests at the Los Angeles County Museum.

Mr. Gilbert Grau gave instructions on labelling of material, stressing the importance of locality and mode of life, which is far more important than their names. Mr. George Kanakoff stated that the most important things to remember in labelling are: What, Where, Who, When, & How. The types of labels were also discussed. This part of the program was greatly enjoyed, and was given early to enable Mr. Grau to leave because of important business elsewhere.

Nomenclature chairman Burch reported on the current announcements which will be found elsewhere in these minutes.

Mr. E. P. Chace spoke on the cleaning of shells. Some of the points he mentioned: to open Oysters and Pholads, put in cold water and change this water often. The cold, fresh water will kill the mollusk gradually and thus cause the muscles to relax when a knife-blade may be inserted between the valves and pulled apart. Boiling causes the mollusk to contract his muscles, sealing up the shell tightly. Other clams may be boiled, cleaned and tied to keep the corresponding valves in correct order. The Gastropods may be cleaned by boiling in water, and if some of the animal still persists, may be put in alcohol for a few days, then removed and dried. It was suggested that Cypraea be placed on a wooden disc placed in the bottom of a container, in cold water, then brought to a boil. This wooden disc keeps the shell from direct contact with the heat at the bottom of the container. Small material may be put in alcohol for several days and then dried, with the exception of Epitoniums--these exude a purple dye, thus staining any other shells placed with them.

Mr. Harry Turver reported on their recent trip to Punta Penasco, Mexico. Being a Palaeontologist, he reported on the how and where of the shells rather than on their names. In the region where he collected there are many types of terrain. Different animals inhabit the rounded rocks, the jointed granite and crevices, and reefs, and thus various ecological situations are encountered.

It was voted to have a class instruction for beginners, to be given by Miss Ruth Coats. Time and place will be announced later.

The meeting was adjourned at 9:45 to study specimens brought by the speakers and three graduating specimens of *Charonia tritonis* brought by Mr. and Mrs. N. C. Cate.

---Mrs. John Q. Burch, Secretary.

LETTER FROM MARGARET TESKEY, SECR. A.M.U.

Dear John:

The nineteenth annual meeting of the American Malacological Union is history, past and gone all of ten days ago. And one thing was thereby proved: you don't need a crowd to have a successful meeting! Seventeen in all, signed up, and that sounds like a skimpy showing. But when it became evident that no more were coming, every soul present turned to - with "then let's get this show on the road!" spirit, and it was the best meeting ever. (We say that every year, but this record may stand.)

You must excuse the use of first names, it was that kind of a meeting. So: Byron and Alice Leonard were the perfect hosts, and due to their careful planning, everything proceeded according to schedule. And speaking of schedule, here is a copy of the program; observe the gaudey little Jayhawk on the cover. He is in evidence everywhere one may go about the campus of the University of Kansas. And what a place that is! Occupies a whole hill-top from where you can survey half of Kansas with maybe some of Missouri.

We held meetings in the new Memorial Union Building, and there too enjoyed the annual dinner and the film of Japanese pearl culture which Myra brought with her - I understand you all saw it first. That was the second evening; the preceding night Jeanne Schwengel had wined and dined us at the hotel as only she can do it. (I wonder might the chef be persuaded to divulge the secret of those smoked-barbequed ribs?)

The Council honored three persons with life memberships: Dr. Paul Bartsch, Dr. S. Stillman Berry, and Dr. Henry A. Pilsbry. The invitation of Dr. George Moore to meet at the University of New Hampshire was accepted; a revised Constitution was approved and will be placed before the membership in the bulletin. And finally, these officers were nominated and elected: President, Dr. Joseph C. Bequaert; Vice-president, Mr. Morris K. Jacobson; 2nd Vice-president, Mrs. Elsie M. Chace; Secretary-Treasurer, Mrs. Margaret C. Teskey; Councillors-at-large, Mr. R. Tucker Abbott, Mr. Ralph W. Jackson, Dr. Miguel L. Jaume, and Dr. Albert R. Mead.

Since history will record the incident and because his name is for all time engraved upon the police blotter of the city of Lawrence, Kansas, I cannot fail to report that Dr. Joseph P. E. Morrison of the United States National Museum, Washington 25, D.C. was given a parking ticket by a member of the local constabulary who mistook his unique vehicle "heap" (would be a kinder term) for a hot-rod belonging to one of the students. You folks on the West Coast who have not laid eyes on Joe Morrison's pet project just have not lived.

Lest you get the mistaken idea that the scientific part of this most enjoyable three-day meeting was neglected, I hasten to say that these papers were presented:

Molluscan Faunal Successions in the Pleistocene of the Great Plains;
A. Byron Leonard, University of Kansas.

Economic Significance of Using Giant African Snail Meal as Poultry Feed;
Albert R. Mead, University of Arizona.

Snail Hosts of Schistosomiasis in British West Africa;
Elmer G. Berry, National Institutes of Health.

Peculiarities of the West African Terrestrial Molluscan Fauna;
Joseph C. Bequaert, Museum of Comparative Zoology.

Preliminary Report on Molluscan Types of Frank Collins Baker;
Dorthea Franzen, Illinois Wesleyan University.

Additional Introductions of Foreign Snails into Arizona;
Albert R. Mead, University of Arizona.

Tour of Raroia Atoll, Tuamotu Islands and French Oceania; a film;
Joseph E. P. Morrison, United States National Museum.

Progress Report on Revisions for the "Treatise of Invertebrate Paleontology"; A. Myra Keen, Stanford University.

Brief Report on the Walter Webb Collection;
Fritz Haas, Chicago Natural History Museum.

Zoogeography, Sub-families and Families;
Joseph P. E. Morrison, United States National Museum.

Speciation and Evolutional Trends in the New Order Clippoidea;
R. Tucker Abbott, United States National Museum.

I began this letter, John, with the idea of letting you and the rest of the folks see what a good time you missed. Convinced? We missed you, but it was your loss, too.

New Hampshire next year, then?

Sincerely,

Margaret Teskey

PLEISTOCENE MOLLUSKS FROM ECUADOR AND PERU.

- by Rosalvina Rivera

INTRODUCTION.

At the suggestion of Dr. Myra Keen, Curator of the Paleontological Museum of Stanford University, I have studied several small collections of Pleistocene fossils from Ecuador and Peru sent to Stanford by five collectors:

1) A collection from LSJU Loc. No. 3159: Punta Santa Elena, Santa Elena Peninsula, Prov. Guayas, Ecuador, collected in 1912 by W. A. Williams, Chief Geologist of Associated Oil Company.

2) Collections from LSJU Loc. Nos. 126 to 131, made by Stanley Harold in March, 1917:

- 126.- San Lorenzo Field, Santa Elena Peninsula, Prov. Guayas, Ecuador.
- 127.- Santa Paula Field, Santa Elena Peninsula, Prov. Guayas, Ecuador.
- 128.- Muey, Santa Elena Peninsula, Prov. Guayas, Ecuador.
- 129.- Estero de las Conchas, half way between San Lorenzo Field and Muey, Santa Elena Peninsula, Prov. Guayas, Ecuador.
- 130.- North Coast of La Puntilla, six feet above high tide in clift, Santa Elena Peninsula, Prov. Guayas, Ecuador.
- 131.- Santa Paula Field, 300 meters South of workshop, Santa Elena Peninsula, Prov. Guayas, Ecuador.

3) Stanford University Loc. No. 3157: from Brea deposits near Cautivo, Santa Elena Peninsula, Prov. Guayas, Ecuador, collected in 1943 by T. F. Thompson, Chief, Geology Section, Special Engineering Division, Canal Zone, Panama.

4) Stanford University No. 3158: Tablazos of Talara, Peru; Collector: T. F. Thompson.

5) Stanford University Loc. No. 125: Manta, Prov. Manabi, Ecuador; collected by B. Bryan some time between 1909 and 1925.

Specimen Nos. 44282 to 44294 were collected by Ruthven W. Pike about 1950 in the area of Bayovar, Departamento de Piura, Peru.

Eric Jordan made a preliminary identification of part of the fossils from localities Nos. 125 (Manta) and 126-131 (Santa Elena Peninsula).

Dr. Myra Keen advised me in further work of identification and systematic arrangement, for which I want to express my grateful acknowledgement.

The identification of this fauna has been done mostly by direct comparison with the shell collection of Stanford University but also by use of systematic literature such as that on Pelecypods by Hertlein and Strong "Mollusks from the West Coast of Mexico and Central America" (1940-1950) and works on special groups, such as the "Family Arcidae" by Reinhart, the "Cardiidae and Veneridae" by Keen. The systematic arrangement of Gastropods follows Thiele's "Handbuch der Systematischen Weichtierkunde."

The collections under consideration consist of 54 species of Pelecypods of which *Glycymeris* sp. is probably a new species, but the only specimen is not well enough preserved to merit a description. There are 87 species of gastro-

Pods, three of which are only tentatively referred to known species (as Northia cf. N. northiae, which is about twice in size of the type), and three can be referred only to genera, due to poorly preserved material. One, Porphyrobaphe iostoma bilabrata Pilsbry, is terrestrial form. There are also three species of Cirripedia: two Balanus and one Tetracrita.

This fauna is Pleistocene in age and comes from the Tablazos formation of the modern raised coast of Ecuador and Peru.

The systematic list of species below is followed by an alphabetic index by genera. The numbers after the species names refer to the localities described above.

SYSTEMATIC CLASSIFICATION

PHYLUM MOLLUSCA

Class Pelecypoda

Order Prionodesmacea

Suborder Taxodonta

Superfamily Arcacea

Family Glycymeridae

Genus Glycymeris Da Costa

Subgenus Axinactis Murch

Glycymeris (Axinactis) delessertii (Reeve)

Glycymeris (Axinactis) inaequalis (Sow.)

Glycymeris sp.

Family Arcidae

Genus Arca Linnaeus

Subgenus Arca s.s.

Arca (Arca) pacifica (Sow.)

Genus Anadara Doshayes

Subgenus Anadara s.s.

Anadara (Anadara) bianculata (Sow.)

Anadara (Anadara) formosa (Sow.)

Anadara (Anadara) tuberculosa (Sow.)

Subgenus Cunearca Dall

Anadara (Cunearca) perlabiata (Grant & Gale)

Genus Arcopsis von Koenen

Subgenus Arcopsis s.s.

Arcopsis (Arcopsis) solida (Sow.)

Genus Barbatia Gray

Subgenus Acar Gray

Barbatia (Acar) gradata (Brod. & Sow.)

Subgenus Cucullaearca Conrad

Barbatia (Cucullaearca) reeveana (d'Orb.)

Subgenus Fugleria Reinhart

Barbatia (Fugleria) illota (Sow.)

Genus Noetia Gray

Subgenus Noetia s.s.

Noetia (Noetia) reversa Gray

Subgenus Eontia MacNeil

Noetia (Eontia) olssoni (Sheldon & Maury)

Suborder Schizodonta

Superfamily Pteriacea

Family Pteriidae

Genus Pteria Scopoli

Pteria sterna (Gould)

Superfamily Ostreacea

Family Ostreidae

Genus Ostrea LinnaeusOstrea cumingiana DunkerOstrea iridescens GrayOstrea mogodon Hanley

Suborder ISODONTA

Superfamily PECTINACEA

Family Pectinidae

Genus Aequipecten FischerAequipecten circularis (Sow.)Aequipecten purpuratus (Lam.)Genus Lyropecten ConradLyropecten subnodosus (Sow.)

Family Spondylidae

Genus Spondylus LinnaeusSpondylus princeps Broderip

Order TELEOSTEACEA

Suborder DIOGENODONTA

Superfamily CARDITACEA

Family Carditidae

Genus Cardita BrugiereCardita cuvieri BroderipCardita megastropa (Gray)Subgenus Carditamera ConradCardita (Carditamera) affinis Sow.

Superfamily CHAMACEA

Family Chamidae

Genus Chama LinnaeusChama buddiana C. B. AdamsChama frondosa BroderipChama frondosa mexicana Carpenter

Superfamily LUCINACEA

Family Lucinidae

Genus Codakia ScopoliCodakia distinguenda (Tryon)

Suborder CYCLODONTA

Superfamily CARDIACEA

Family Cardiidae

Subfamily Trachycardiidae

Genus Trachycardium MurchSubgenus Trachycardium s.s.Trachycardium (Trachycardium) consors (Sow.)Subgenus Mexicardia StewartTrachycardium (Mexicardia) procerum (Sow.)Subgenus Dallocardia StewartTrachycardium (Dallocardia) senticosum (Sow.)

Subfamily Fraginae

Genus Trigoniocardia DallSubgenus Trigoniocardia s.s.Trigoniocardia (Trigoniocardia) obvalis (Sow.)Subgenus Americardia StewartTrigoniocardia (Americardia) guanacastensis (Hertlein & Strong)

Suborder TELEODONTA

Superfamily VENERACEA

Family Veneridae

Subfamily Pitarinae

- Genus Pitar Roemer
 - Subgenus Pitar s.s.
 - Pitar (pitar) unicolor (Sow.)
 - Subgenus Hysteroconcha Herrmannsen
 - Pitar (Hysteroconcha) lupanaria (Lesson)
 - Subgenus (Lamelliconcha) Dall
 - Pitar (Lamelliconcha) concinus (Sow.)
- Genus Megapitaria Grant & Gale
 - Megapitaria aurantiaca (Sow.)
- Subfamily Chioninae
 - Genus Chione Megerle von Mühlfeldt
 - Subgenus Chione s.s.
 - Chione (Chione) compta (Broderip)
 - Subgenus Lirophora Conrad
 - Chione (Lirophora) mariae (d'Orbigny)
 - Genus Protothaca Dall
 - Subgenus Nioche Hertlein & Strong
 - Protothaca (Nioche) grata (Say)
 - Protothaca (Nioche) metodon (Pilsbry & Lowe)
 - Subgenus Notochione Hertlein & Strong
 - Protothaca (Notochione) columbiensis (Sow.)
 - Genus Anomalocardia Schumacher
 - Anomalocardia broggii Pilsbry & Olsson
 - Anomalocardia subrugosa (Wood)
- Family Petricolidae
 - Genus Petricola Lamarck
 - Subgenus Petricola s.s.
 - Petricola (Petricola) carditoides (Conrad)
- Superfamily Tellinacea
 - Family Tellinidae
 - Genus Strigilla Turton
 - Strigilla cicercula (Philippi)
 - Family Semelidae
 - Genus Semele Schumacher
 - Semele flavescens (Gould)
 - Family Donacidae
 - Genus Donax Linnaeus
 - Donax aricana Dall
 - Donax asper Hanley
 - Donax gracilis Hanley
 - Donax transversus Sow.
- Superfamily Solenacea
 - Family Solenidae
 - Genus Solen Linnaeus
 - Subgenus Solena Mörch
 - Solen (Solena) rudis Adams
- Superfamily Nacitracea
 - Family Nacitridae
 - Genus Mulinia Gray
 - Mulinia pallida (Brod. & Sow.)

Class GASTROPODA

Order ARCHAEOGASTROPODA

Suborder ZEUGOBRANCHIA

Family Fissurellidae

Subfamily Emarginulinae

Genus Diodora GrayDiodora aspera (Eschscholtz)Diodora saturnalis (Carpenter)

Subfamily Fissurellinae

Genus Fissurella BrugiereFissurella virescens Sow.Fissurella sp.

Suborder Docoglossa

Superfamily Patellacea

Family Acmaeidae

Subfamily Acmaeinae

Genus Acmaea EschscholtzAcmaea cf. A. variabilis (Sow.)

Superfamily Trochacea

Family Trochidae

Subfamily Trochinae

Genus Tegula LessonSubgenus Omphalius PhilippiTegula (Omphalius) panamensis (Philippi)Tegula (Omphalius) reticulata (Wood)Tegula (Omphalius) rufoflammulata Koch

Family Turbinidae

Subfamily Turbininae

Genus Turbo LinnaeusSubgenus Callopoma (Gray)Turbo (Callopoma) fluctuosus WoodTurbo (Callopoma) saxosus WoodSubgenus Senectus SwainsonTurbo (Senectus) squamiger ReeveGenus Astraea RödingSubgenus Uvanilla GrayAstraea (Uvanilla) buschii (Philippi)

Superfamily Neritacea

Family Neritidae

Subfamily Neritinae

Genus Nerita LinnaeusNerita bernhardi Roeluz

Order MESOGASTROPODA

Superfamily Cerithiacea

Family Turritellidae

Genus Turritella LamarckTurritella banksii ReeveTurritella gonostoma Valenciennes

Family Vermetidae

Genus Vermicularia LamarckVermicularia pellucida Broderip & Sowerby

Family Cerithiidae

Subfamily Cerithiinae

Genus Cerithium BrugiereCerithium adustum KienerCerithium billocheusti Petit

Superfamily Hipponicacea

Family Hipponicidae

Genus Hipponix DeFranceHipponix antiquatus (Linnaeus)Hipponix barbatus Sow.

Superfamily Calyptraeacea

Family Calyptraeidae

Genus Crepidula LamarckCrepidula aculeata (Gmelin)Crepidula arenata (Brod.)Genus Crucibulum SchumacherCrucibulum imbricatum (Sow.)Crucibulum spinosum (Sow.)

Superfamily Strombacea

Family Strombidae

Genus Strombus LinnaeusStrombus gracilior Sow.Strombus granulatus Swainson

Superfamily Naticacea

Family Naticidae

Genus Polinices MontfortSubgenus Neverita RissoPolinices (Neverita) alta DallPolinices (Neverita) glaucia (Lesson)Polinices cf. P. galapagosa RecluzGenus Natica ScopoliNatica marochiensis (Gmelin)Natica cf. N. elenae Recluz

Superfamily Cypraeacea

Family Cypraeidae

Subfamily Triviinae

Genus Trivia GraySubgenus Fusula JousseaumeTrivia (Fusula) radians (Lam.)Trivia (Fusula) solandri (Sow.)

Subfamily Cypraeinae

Genus Cypraea LinnaeusCypraea arabicula Lam.Cypraea cervinetta Kiener

Superfamily Tonnacea

Family Cassidae

Genus Semicassis MurchSemicassis centiquadratum Val. (variety fide Pilsbry & Olsson)Genus Cassis ScopoliSubgenus Levenia GrayCassis (Levenia) coarctata Sow.

Order STENOGLOSSA

Superfamily Muricacea

Family Muricidae

Genus Chicoreus MontfortSubgenus Muricanthus SwainsonChicoreus (Muricanthus) melanomathos (Gmelin)Chicoreus (Muricanthus) radix (Gmelin)

Genus Thais RödingSubgenus Stramonita SchumacherThais (Stramonita) biserialis (Blainville)Thais (Stramonita) callaoensis (Gray)Thais (Stramonita) chocolata (Duclos)Thais (Stramonita) crassa (Blainville)Thais (Stramonita) haemostoma (Linnaeus)Thais (Stramonita) triangularis (Blainville)Genus Cymia MörchCymia tectum (Wood)Genus Acanthina Fischer von WaldheimAcanthina brevidentata MaweAcanthina muricata (Gray)Genus Vitularia SwainsonVitularia salebrosa (King)Superfamily BuccinaceaFamily ColumbellidaeGenus Pyrene RödingPyrene fuscata (Sow.)Pyrene labiosa (Sow.)Pyrene major (Sow.)Pyrene paytensis (Lesson)Genus Strombina MörchStrombina lanceolata (Sow.)Genus Anachis H. and A. AdamsAnachis fluctuata (Sow.)Anachis sp.Family BuccinidaeGenus Northia GrayNorthia cf. N. northiae GrayGenus Cantharus RödingCantharus distortus (Wood)Cantharus elegans (Gray)Cantharus gemmatus (Reeve)Cantharus ringens (Reeve)Genus Hanetia JousseaumeHanetia anomala ReeveFamily FasciolaridaeGenus Latirus MontfortLatirus ceratus (Wood)Latirus mediamericanus Haerlein & StrongLatirus varicosus (Reeve)Genus Leucozonia GrayLeucozonia cingulata (Lam.)Genus Fasciolaria Lam.Fasciolaria princeps Sow.Superfamily VolutaceaFamily OlividaeSubfamily OlivinaeGenus Oliva BruguiereOliva incrassata (Solander)Oliva spicata (Röding)Genus Olivella SwainsonOlivella columellaris Sow.Olivella terrina (Duclos)Olivella volutella (Lam.)

Family Mitridae

Subfamily Mitrinae

Genus Mitra LamarckMitra lens WoodMitra funiculata ReeveMitra sp.

Family Vasidae

Genus Vasum RødingVasum caestus (Brod.)

Family Marginellidae

Genus Marginella LamarckSubgenus Prunum HerrmannsenMarginella (Prunum) curta Sow.Marginella (Prunum) sapotilla Hinds

Order TOXOGLOSSA

Family Conidae

Subfamily Coninae

Genus Conus LinnaeusConus brunneus (Mawe)Conus gladiator Brod.Conus patricius HindsConus purpurascens Brod.Conus recurvus Brod.Conus regularis Sow.

Family Terebridae

Genus Terebra BruguiereTerebra strigata (Sow.)

Subclass OPISTHOBRANCHIA

Order FLEUROCONIA

Suborder CEPHALASPIDEA

Family Bullidae

Genus Bulla LinnaeusBulla punctulata (Adams)

Subclass PULMONATA

Order STYLOMATOPHORA

Superfamily Bulimulacea

Family Bulimulidae

Subfamily Orthalicinae

Genus Porphyrobaphe ShuttleworthPorphyrobaphe hostoma bilabrata Pilsbry

Phylum ARTHROPODA

Class CIRRIPEdia

Order THORACICA

Suborder BALANOMORPHA

Family Balanidae

Subfamily Balaninae

Genus Balanus da CostaSubgenus Megabalanus HoekBalanus (Megabalanus) psittacus (Molina)Balanus (Megabalanus) tintinnabulus concinnus DarwinGenus Tetraclita SchumacherTetraclita squamosa panamensis Pilsbry

ALPHABETIC LIST

PELECYPODA

- Aequipecten circularis (Sow.) 130, 131, 127, 3157, 3158, 3159
purpuratus (Lam.) 44284, 44285
Anadara (Anadara) biangulata (Sow.) 125
formosa (Sow.) 129
tuberculosa (Sow.) 127, 3157, 3159
(Cunearca) perlabiata (Grant & Gale) 130
Anomalocardia brogii Pilsbry & Olsson 44293
subrugosa (Wood) 3159, 129
Arca (Arca) pacifica (Sow.) 127, 3159
Arcopsis (Arcopsis) solida (Sow.) 130
Earbatia (Acar) gradata (Brod. & Sow.) 127, 130
(Cucullacarca) reeveana (d'Orb.) 127, 130
(Fugleria) illota (Sow.) 127, 130
Cardita cuvieri Broderip 3159
megastropa (Gray) 127
(Carditamera) affinis Sow. 125, 130, 131
Chama buddiana C.B. Adams 127
frondosa Broderip 125
frondosa mexicana Carpenter 3159, 44287
Chione (Chione) compta (Brod.) 126, 127, 129, 3157
(Lirophora) mariae (d'Orb.) 130, 3157
Codakia distinguenda (Tryon) 126
Donax aricana Dall 127, 129, 130
aspera Hanley 3157
gracilis Hanley 127
transversus Sow. 127
Glycymeris (Axinactis) delessertii (Reeve) 3159
inaequalis (Sow.) 131, 3157, 3159
Glycymeris sp. 126, 3159
Lyropecten subnodosus (Sow.) 3158, 3159
Megapitaria aurantiaca (Sow.) 125
Mulinia pallida (Brod. & Sow.) 125, 3157
Noetia (Eontia) olssoni (Sheldon & Maury) 127, 130, 3157
(Noetia) reversa (Gray) 125, 127, 3159
Ostrea cuneoliana Dunder 44283
iridescens Gray 125, 128
megodon Hanley 3159, 44288, 44291
Petricola (Petricola) carditoides (Conrad) 3157
Pitar (Hysteroconcha) lupinaria (Lesson) 126, 3157
(Lamelliconcha) concinus (Sow.) 125, 127
(Pitar) unicolor (Sow.) 3157
Protothaca (Nioche) grata (Say) 3157
metodon (Pilsbry & Lowe) 126, 131, 3157
(Notochione) columbiensis (Sow.) 3157
Pteria sterna (Gould) 125, 127
Semele flavescens (Gould) 128, 3157
Solen (Solena) rudis Adams 127
Spondylus princeps Broderip 125
Strigilla cicercula (Philippi) 130
Trachycardium (Dallocardia) senticosum (Sow.) 3157, 3159
(Mexicardia) procerum (Sow.) 44292
(Trachycardium) consors (Sow.) 125

Trigoniocardia (Americardia) guanacastensis (Hertlein & Strong) 125, 126, 127
 (Trigoniocardia) obovalis (Sow.) 129

GASTROPODA

Acanthina brevidentata Mawe 127, 128
 muricata (Gray) 125, 130
Acmaea cf. A. variabilis (Sow.) 127, 130
Anachis fluctuata (Sow.) 127
Anachis sp. 126
Astraea (Uvanilla) bushii (Philippi) 125, 126, 128, 129, 130, 3157
Bulla punctulata (Adams) 125, 127, 129, 130
Cantharus distortus (Wood) 125, 127, 128, 3157
 elegans (Gray) 129, 130, 3159
 gemmatus (Reeve) 127, 129, 3159
 ringens (Reeve) 129, 130
Cassis (Levenia) coarctata Sow. 125, 3159
Cerithium adustum Kiener 125, 128, 130, 3159
 billeheusti Petit 129, 130, 131, 14294
Chicoreus (Muricanthus) melanomathos (Gmelin) 125
 radix (Gmelin) 125
Conus brunneus (Mawae) 125
 gladiator Brod. 129
 patricius Hinds 125, 126
 purpurascens Brod. 125, 129, 1301, 131, 3157, 3159
 recurvus Brod. 130
 regularis Sow. 125
Crepidula aculeata (Gmelin) 126, 127, 3157
 arenata (Brod.) 126, 127
Crucibulum imbricatum (Sow.) 125, 126, 129, 130, 131, 3157
 spinosum (Sow.) 126, 127
Cymia tectum (Wood) 125
Cypraea arabacula Lam. 125, 126, 131
 cervinetta Kiener 125, 130
Diodora aspera (Eschscholtz) 130
 saturnalis (Carpenter) 127, 130
Fasciolaria princeps Sow. 3159
Fissurella virescens Sow. 127, 129, 130, 131, 3159
Fissurella sp. 129
Hanetia anomala Reeve 125
Hipponix antiquatus (Linn.) 130
 barbatus (Sow.) 130
Latirus ceratus (Wood) 125, 3157, 3159
 mediamericanus Hertlein & Strong 125
 varicosus (Reeve) 125
Leucozonia cingulata (Lam.) 130
Margarella (Prunum) curta Sow. 127
 sapotilla Hinds 127
Mitra funiculata Reeve 128
 lens Wood 126, 127
Mitra sp. 126
Natica cf. N. elenae Recluz 126
 marochiensis (Gmelin) 129
Nerita bernhardi Recluz 129, 130, 3157

- Northia cf. N. northiae Gray 3159
Olivia incrassata (Solander) 3159
 spicata (Röding) 3159
Olivella columellaris Sow. 127, 128, 130
 tergata (Duclos) 127
 volutella (Lam.) 127, 129, 3157
Polinices (Neverita) alta Dall 131
 glauca (Lesson) 126
Palinices cf. P. galapagosa Recluz 130
Porphyrobaphe iostoma bilabrata Pilsbry 131
Pyrene fuscata (Sow.) 129, 130
 labiosa (Sow.) 127
 major (Sow.) 126, 127, 128, 129
 paytensis (Lesson) 127, 128, 129, 130
Semicassis centiquadratum Val. (var. fide Pilsbry & Olsson) 125
Strombina lanceolata (Sow.) 125
Strombus gracilior Sow. 125
 granulatus Swainson 125
Tegula (Omphalius) panamensis (Philippi) 128, 129, 130
 reticulata (Wood) 127, 128, 129, 130
 rufoflammulata Koch 126
Terebra strigata (Sow.) 125
Thais (Stramonita) biserialis (Blainville) 127, 131, 3159
 callaoensis (Gray) 127, 129
 chocolata (Duclos) 44286
 crassa (Blainville) 127, 131, 3159
 haemostoma (Linn.) 128, 130
 triangularis (Blainville) 126
Trivia (Pusula) radians (Lam.) 127, 128, 129, 130, 3157
 solandri (Sow.) 127, 130
Turbo (Callipoma) fluctuosus Wood 130
 saxosus Wood 125, 126, 128, 130, 3157, 3159
 (Senectus) squamiger Reeve 130
Turritella banksii Reeve 130, 131
 gonostoma Valenciennes 130, 3159, 44290
Vasum caestus (Brod.) 125
Vermicularia pellucida Brod. & Sow. 130
Vitularia salobrosa King 125

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CIRRIPIEDIA

- Balanus (Mogabalanus) psittacus (Molina) 3158, 44289
 tintinnabulus concinus Darwin 3158
Tetraclita squamosa panamensis Pilsbry 130

NEW PUBLICATIONS RECEIVED

- The Nautilus- Vol. 66, No. 4, April, 1953 The papers are:
 A new species of Pleurobranchus from the Caribbean (Tectibranchia) by N.T. Mattox. This is a carefully prepared description of this species, well figured and clear. I might suggest here that Dr. Mattox, now at Hancock Foundation, University of Southern California, publish a paper on the species of Pleurobranchus from this coast. There is considerable confusion regarding our species.
 Land Snails of the southern Atlantic Coastal Plain by Leslie Hybricht
Conger leucophaeta (Conrad) in the Hudson River by Morris K. Jacobson.
 Revised list of mollusks from York County, Pennsylvania, by Robert A. Heilman and Gordon K. MacMillan.
 Fresh-water mussels used by Illoixan Indians of the Hopewell culture By Max R. Matteson.
 An obituary for Imogene Strickler Robertson

- Venus- The Japanese Journal of Malacology- May, 1953
 New Genera and Species of Japanese Rapidae By Tokubei Kuroda
 Papers in both English and Japanese
 Descriptions of Twelve New Japanese Shells By Tadashige Habe
 On the Japanese Species of the Genus Nuttallia (Pelecypoda) By Tetuaki Kira
 Review of the Known Species of Japanese Turridae (1) By Katura Oyama. This is very interesting because of the generic names used. The synonymy of the species is given. The Etrema species reported from Japan are separated into three genera. It seems obvious that the work of all specializing on the turrids is having a tendency to increase the number of genera involved in geometric ratio. A worldwide list of the generic names applied to the Turridae alone would make an imposing list. The problem confronting a curator attempting to properly classify a cabinet full of turrids to the many genera seems at this time next to an impossibility. A host of new genera have been described for certain species or groups of species of many localities, but it is rarely attempted to list other species from other provinces that should be included in the new genera. The result is that it is almost certain that most of us have species of the same genus under several different generic names.
Euhadra eo gulicki Pilsbry var. Variability of Size and Relative Growth in the Land Snail, ... By Ikuso Hamai

- Proceedings of the Malacological Society of London-Vol. 30, parts 1 and 2 21 May, 1953.
 English Eocene and Oligocene Veneridae. By W.E. Tremlett
 A new species of the Lamellibranch genus Isognomon from South Africa. By H.J. Koch
 Notes From the British Museum. I Pinna By Guy L. Wilkins.
 This is a valuable paper describing two neotypes and a list of type specimens of Pinna in the collection of the British Museum.
 The Structure of the Ligament of the Semelidae By E.R. Trueman
 Notes on the Snails of North-East Tanganyika Territory- Five New Species and Varieties of Gulella from the Usambaras By Bernard Verdcourt
 Mollusca of the University of Oxford Expedition to the Cayman Islands in 1938 By A.E. Salisbury. New species of chiton described and figured- Chaetopleura reesi sp. nov.

The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's development.

The second part of the report deals with the economic situation of the country. It is a very interesting and informative study of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's economic development.

The third part of the report deals with the social situation of the country. It is a very interesting and informative study of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's social development.

The fourth part of the report deals with the political situation of the country. It is a very interesting and informative study of the country's political development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's political development.

The fifth part of the report deals with the future of the country. It is a very interesting and informative study of the country's future. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is a valuable contribution to the study of the country's future.

Basteria-Vol. 17, No. 1 en 2, 15-V-1953

Mollusken dept. Haut-Rhin By A.C. Van Bruggen

Vitamin C-Gehalt und Nahrungswahl By Ewald Fromming

Notes on Kenya Land- and Freshwater Snails. 4. A note on the distribution of the subgenus Psichion of Trachycystis By Bernard Verd-court.

Malakologische Resultate einer Reise nach der asiatischen Türkei:

H.W.E. Croockewit 1. Einführung

Lothar Forcart: 2. Verzeichnis der non Herrn H.W.E. Croockewit in der Türkei gesammelten Land und Susswassermollusken (excl. Clausiliidae).

F.E. Loosjes: 3. Clausilien-Ausbeute des Herrn H.W.E. Croockewit aus der Asiatischen Türkei, Umgebung von Zonguldak

W.S.S. Van Benthem Jutting: 4. Marine Mollusken von Zonguldak und Amasra an der Sudkuste des Schwarzen Meeres.

Correspondentieblad Van De Nederlandse Malacologische Vereniging
Nos. 49 (April, 1953 and 50 (June 1953)

A number of very fine articles are contained in these bulletins.

Memorias de la Sociedad Cubana De Historia Natural- Vol. XXI, No.3,
Mayo, 1953

Moluscos Terrestres De La Region De Baracoa, Habana Por Carlos G. Aguayo y Miguel L. Jaume

Nuevos Moluscos Cubanos De La Familia Cerionodae Por Carlos G. Aguayo y Marion Sanchez Roig

Algunos Nuevos Moluscos Terrestres De Cuba Oriental Por Carlos Guillermo Aguayo

State of Washington- Dept. of Fisheries- State Shellfish Laboratory-
Quilcene, Washington The current report titled Japanese Oyster
Seed Export Program for 1953. This is a very interesting account
of the seed, shippers, methods used to check oyster drill etc.

Four New Species of New Zealand Land Snails and the Systematic
Position of Gerontia Cordelia Hutton and New Zealand Molluscan
Systematics, with Descriptions of New Species , Part 1 By A.W.B.
Powell, Auckland Museum. Rec. Auck. Inst. Mus. Vol. 4, No.3,
Dec. 1952. Numerous new marine shells described and well figured.

Notes on Pila ovata (Oliver) and its distribution in Africa
by T. Pain Rev. Zool. Bot. Afr. XLVI, 3-4) 24 Dec., 1952

Cruise That Probed Life of Abyss- This is the title of an article
in Australian Newsletter- Fisheries- May, 1953 and is an account
in brief of the Danish Galathea deep sea expedition. The final
results of this expedition should be of great importance. It is
said that no expedition since the Challenger has done so much. The
trawl hauls from such depths as 10,189m sound almost fantastic and
should add a great deal to our knowledge of the ocean depths.

Note from Allyn Smith:- Hope you had a good trip back. Miss Thompson
and friend were sideswiped badly at the junction of the Casbroville
turnoff from the Salinas highway- had to be towed in to Salinas
for repairs. No one hurt, thank goodness. We stopped and offered
aid but there was nothing we could do. The front end of their car
was badly dented plus a wrecked front fender.

MINUTES OF THE CONCHOLOGICAL
CLUB OF SOUTHERN CALIFORNIA

July 7th, 1953

The president, Mrs. Harry Turver, called the meeting of July 7th to order at 7:40 P.M. in the Los Angeles County Museum, welcoming 36 members and guests.

The Minutes of the June 2nd meeting were read and approved.

Educational chairman, Dr. H. R. Hill asked for suggestions for the monthly ten minute report. For this month Dr. Hill presented a list of books and papers useful in studying molluscan life from South of the border. The list was on the blackboard for all interested to copy.

Mrs. Elsie Chace, chairman of the American Malacological Union, Pacific Division, reported on the annual meeting of this organization recently held at Pacific Grove.

The secretary reported on a telephone call from Mrs. H. Arden Edwards at 44665 N. Cedar St., Lancaster, Calif., where they are staying during Mr. Edward's illness.

In the absence of Miss Ruth Coats, the secretary was called upon to introduce the speaker of the evening, Mr. John Fitch of the California Department of Fish and Game, Marine Fisheries Branch, who gave a very interesting talk on the many activities of his department relative to mollusks, and many other groups. He told of the progress of the work in the Salton Sea as well as all along the coast. At the close of his talk he answered questions and gave a great deal of valuable information. He told of the taking of a tuna taken in Japan, which had been tagged here. This was of interest because it had not been positively known that tuna ranged so far. Mr. Fitch then illustrated his talk with color slides.

Mrs. John Q. Burch, Secretary.

- We have just received the first issue of "The Marine Zoologist" published in So. Australia. This exceedingly interesting publication will be fully reviewed in our next Minutes by Mr. John Q. Burch.

MINUTES 130

AUG. 1953

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all new to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax. 3-5710
Home Ax 2-7965

NEW PUBLICATIONS RECEIVED

Observations on *Hipponix antiquatus* (Linnaeus) by C.M. Yonge
Proc. Cal. Acad. Sci. July 15, 1953 pp 1-24, 9 text figs.
The data for this paper was secured by Professor Yonge while
visiting professor at the University of California in 1949, and
the life history and anatomy of this puzzling sedentary gastropod
is very thoroughly covered.

Mollusks from Clipperton Island (Eastern Pacific) with the Descrip-
-tion of a New Species of Gastropod by Leo George Hertlein and
William K. Emerson- Trans. San Diego Soc. Nat Hist July 22, 1953.
pp 345-364, plates 26-27. The fauna of this island is of unusual
interest because of the presence of Polynesian species in an area
on the boundary of the Panamic and Indo-Pacific faunal provinces.
It is interesting to note well known Panamic if not Californian
species in the same list with species from the Indo Pacific. The
new species is Clanculus (Panocochlea) clippertonensis.

MINUTES

1958

CONSTITUTION

ARTICLE I

NAME

Section 1. The name of the organization shall be the "National Association of Public Health Officers."

Section 2. The purpose of the organization shall be to promote the health of the people of the United States and to advance the science of public health.

Section 3. The organization shall have the right to acquire, hold, and dispose of real and personal property.



Section 4. The organization shall have the right to sue and be sued.

Section 5. The organization shall have the right to enter into contracts.

Section 6. The organization shall have the right to borrow money.

Section 7. The organization shall have the right to hold and convey property.

Section 8. The organization shall have the right to make and alter its bylaws.

Section 9. The organization shall have the right to elect and remove its officers and members.

Section 10. The organization shall have the right to hold and conduct its business in any part of the United States.

Section 11. The organization shall have the right to hold and conduct its business in any foreign country.

Section 12. The organization shall have the right to hold and conduct its business in any territory or possession of the United States.

Section 13. The organization shall have the right to hold and conduct its business in any other place where it may deem it proper to do so.

Section 14. The organization shall have the right to hold and conduct its business in any other place where it may deem it proper to do so.

Section 15. The organization shall have the right to hold and conduct its business in any other place where it may deem it proper to do so.

Two Mountain Snails of the Genus *Helminthoglypta*- A Problem in the Relationship of Species- By S. Stillman Berry. Trans. San Diego Soc. of Nat Hist. April 17, 1953. Title should have been " Two Californian Mountain Snails". .. pp 329-344 plates 24-25.

This paper is prepared with the usual careful attention to detail expected from papers by Dr. Berry. Anatomical figures and data are well presented. The species are *H. lowei* and *H. thermimontis*.

The Nautilus- Vol. 67, No. 1, July 1953 The contents follow:

Materials for a Revision of East Coast and Floridan Volutes

By Henry A. Pilsbry and Axel A. Olsson. Three good plates illustrate this paper. It is an excellent paper and certainly timely because of the comparative abundance of these formerly extremely rare species. I am sure that we are not alone when we mention that our copies of the excellent papers in *Johnsonia* on this group are well thumbed with certain specimens remaining on the table without names. This paper should assist.

Mollusks from Kwajalein By Richard V. Dietrich and Percy A. Morris. This paper is illustrated by one good plate and contains a list of species. It should be of value to the many unclassified lots of Marshall shells.

Scalariform *Anguispira* and *Triodopsis* By Alan Solem. Interesting paper but scalariform specimens of our local snails are by no means rare. We have several of them.

Oreohelix in San Diego County, California By Joshua L. Baily Jr. Dr. Baily in this paper seems to confirm the opinion already held by most that this record was based upon simple error. I often wonder how many of the more or less fantastic records now in the literature could be erased if we but knew of the fact that a label was misplaced or that the collector left a shell in his pail from his last trip.

The Zonitidae of Pittsylvania County, Virginia By Leslie Hubricht. Fresh-water Mussels Used by Illinoian Indians of the Hopewell Culture By Max R. Matteson.

The Mollusks inhabiting some temporary pools and ponds in Illinois and Ohio By Ralph W. Dexter.

A Preliminary Survey of the Land Mollusks of Alachua County, Fla. By Edward H. Mickelson.

A Catalogue of the Molluscan Genus *Distorsio* (Gastropoda, Cymatiidae) By William K. Emerson and Elton L. Puffer. This is a valuable contribution- Pub. Proc. Biol. Soc. of Wash, Aug. 10, 1953.

Of course, the typical *Distorsio* anus or *D. clathratus* etc. seem to give the amateur student little trouble, there are some of them that - well I will admit that I have several batches about labelled *Distorsio* sp.

Distorsio *reticulata* vs. *Distorsio* *clathrata* in the West Indies By Elton L. Puffer- Proc. Biol. Soc. of Wash Aug. 10, 1953.

An excellent paper and well illustrated with a plate.

Mollusks from Ilha Grande, Rio De Janeiro, Brazil By Fritz Haas *Fieldiana-Zoology*, Chicago Nat. Hist. Mus. July 24, 1953. This interesting paper contains a faunal list of Marine Mollusks including some work seldom done such as examination of the intestines of Sea Cucumber, Starfish, Sea Slug etc. There is also a faunal list of land and freshwater mollusks. New species described and figured are *Natica* (*Tectonatica*) *micra* and *Ithyocythara hyperlepta*.

Four New Species of New Zealand Land Snails and the Systematic Position of *Gerontia Cordelia* Hutton and New Zealand Molluscan Systematics, With Descriptions of New Species Part 1 By A.W.B. Powell- Rec. Auckland Inst. Mus. Vol. 4, No. 3, Dec. 1952.

This paper is well illustrated with clear plates and should by all means be placed with the works on the New Zealand fauna or if interested in this fauna I suggest that you may well change a couple of labels. The distinctions are clearly made.

The Marine Zoologist - Sydney, Australia. The note states that this is the First Issue. It is a neatly printed booklet. The exact date of publication is a bit puzzling.

The sub-Editors are Miss G. Thornley and Mr. D. McAlpine. The outlines of the publication are given by Mts. L. Woollacott. Papers contained are "A Shell That Builds a House" By C.F. and J. Laceron- discussion of a new record for *Gastrochaena*. "Notes on Some Siphonariidae" By David McAlpine "A New Thais Found on a Log at Port Stephens" By Gertrude Thornley. The species is *Dicathais vector*. The species is well described and the plate illustrating it is very clear- from drawings not photos. "Cominella eburnea Reeve" By R. Swan- "A Visit to Port Stephens" By T. Garrard.

Construction and Formation of Mollusks By George Pattison, South Australia and Habits and Habitats of Molluscs by the same author. Both are interesting mimeographed papers containing a great deal of general information.

Illustrated Catalogue of Japanese Shells Edited by Dr. Tokubei Kuroda- This valuable series is continuing steadily- No. 20 Nov. 30, 1952 Atyidae in Japan by Tadashige Habe No. 21 Lyonsiidae, Poromyidae, Arcticiidae, and Gaimardiidae in Japan by T. Habe No. 22 Astartidae, Crassatellitidae, Mesodesmatidae and Laturnulidae by T. Habe No. 23 April 1, 1953 Xenophoridae, Columbariidae and Caecidae in Japan by T. Habe.

This series is composed of well illustrated monographs on the various genera covered and seem to be almost indispensable for the separation of many species.

* All are available from John Q. Burch if desired

Circulares Del Museo y Bibliotheca De Malacologia De La Habana Calle 13 No. 351, Vedado, Habana, Cuba. The price of this series is \$1.50 per 100 pages. The periodical is mimeographed but contains a vast amount of valuable information.

Fisheries Newsletter- Australia- for July, 1953. This issue contains an interesting article by A.M. Olsen on "Diving Investigations on Scallop Beds". The modern equipment of the so called "Frogmen" is interesting indeed but the practical use of such things is seldom mentioned. These were equipped with underwater cameras, two way telephone sets etc. Of course, the idea was to determine the extent and location of the beds. Imagine 30-36 scallops per sq. yd.

Random notes by the editor- John Q. Burch

One of my foreign correspondents some time ago commented that one of our well known conchologists had a "Jehovah Complex". At the time I thought nothing of it but since have had to chuckle at the word because it seemed so appropriate. To mention systematics in Japan is to invite hysteria and if you think of the word Australasia better be running. The idea, of course, is that these chaps have no business fooling around with a subject already so very very thoroughly understood by the gentleman mentioned. But he adds fun and spice because no one takes him quite as seriously as he does himself.

My friend, W.J. Sheffler, well known ornithologist and at this time president of the Cooper Club, has just returned from a birding trip to the Hudson Bay country. Of course, I urged him to collect shells and no doubt all of his friends who are botanists, entomologists etc. also urged him to look into their interest. I hardly expected anything from Bill between bird trips and it was a howling success as a bird trip, but he did drop in with a bag of shells and I have found them of considerable interest even though few. The single valve of Pecten (Chlamys) islandicus is not surprising but the fact that the big Lymnaea stagnicola could be so very abundant at such a spot rather interested me although I know little or nothing about these fresh water species. But these were collected at a spot almost exactly 45 miles south of the Arctic Circle.

Poison cones.- I am often asked this question. Did anyone ever hear of a person being stung in any way by a species of Conus along this coast? We hear numerous accounts of persons being hurt by Conus textile and others on the other side of the Pacific, even though most of them resulted in no more than temporary pain with no particularly bad results. Of course, we all have read of the cases resulting in death etc. But certainly our Panamic Conus dalli must be at least some very close relation to textile and one might expect something of the same from it at some time or another. And I recall being very much impressed a number of years ago in San Francisco when Dr. Hanna showed me under a microscope the poison sacs etc. of other west coast species. And as far as size is concerned there seems to be no reason why large Conus fergusonii, patricius or even large purpurascens should not pack the same whallop some of those South Pacific things do. Suggest our collectors ask the native people of Mexico if they ever heard of such a thing. It would be interesting if they had.

In connection with the above there are, of course, a host of papers and even books attempting to set up arguments in favor of a Pacific continent or land bridge over the Pacific in past geologic time. It is true that most of these are fanciful and it is always easy to point out the doubtful conclusions or obvious inaccuracies. But I still like fairy stories and the Land of Mu appeals to me. After all it simply doesn't appeal to me as reasonable to suggest that any large number of species evolved to be apparently identical on opposite sides of the great Pacific. There may have been other means of dispersal but most of the learned simply knock these other ideas into a cocked hat and then hastily drop the matter, making no other alternative. But as I said there are a lot of them and even in my little library I seem to have a sizable stack- for example on top here is "Evidence for the spread of East Indian forms to Equatorial America during Eocene time" by Willard Berry from Bulletin of the Geological Society of America, vol 41, Sept. 30, 1930. But it is now very clear that I am not a geologist.

Continuing my evening indulgence in imagination, how about Easter Island? I read a few things about it ..Routledge: Mystery of Easter Island etc. This island is not only the site of the mysterious huge statues, undeciphered writings etc. but we have some rather interesting things in the way of endemic shells. For example I recently acquired a handful of the species Cypraea caputdraconis Melvill. It is obvious that these shells and the well known C. caputserpentis must have had a common ancestor, and yet they are very easily separated now. How and when did they get there? "Hush- dont ask foolish questions" is the best answer I find.

DIRECTORY OF CONCHOLOGISTS

If you haven't sent me your interests I would appreciate it if you will do so. If I am going to get such a thing out it should be as nearly correct as possible. After every issue I get letters from certain prominent conchologists marveling at the fact that their names were omitted.

Letter from Arthur Blok, Rottingdean, Sussex, England "Minutes No. 128 have, as the Minutes always do, given me pleasure and the more so because they show the usual mixture of hard science and good humour which make this series so different from the heavy burden of other scientific publications which I read. I should like very much to have a copy of "Common Marine Bivalves of California" if one is still available- if you can send me one I shall be very grateful.

The old bogey of 'common' names I see again raises its head and the answer, of course, must be that there is a place for both, depending on the people with whom you are dealing. These popular names are quite a study and if you go back a bit you find some amusing examples. I have a manuscript statement from a dealer dated 1763 offering a range of shells including such gems as "The spectre", "A very fine bastard from Panama", "Six bead shells", "A fine thorny woodcock", "Two long spires", "Two brown pouches", "Two Moors", "A Main Sail", "Two Cloaths of Gold", "A Fine Grimace" and "Two Protuberated Buccs".

There are also some beauties in Dutch (including a Capitaaale Wentletrap at 502 florins) mentioned in the 4th Sendschreiben addressed by I.H. Chemnitz to Margaretha Barbara Burckmannin in his "Kleine Beytrage zur Testaceo theologie" Frankfurt und Leipzig 1760.

But for me accurate nomenclature and the International Rules, please.

While writing to you it occurs to me to ask if anybody on your side is interested in authgraph letters (not mere detached auto-graphs) of conchologists. If so would they care to exchange? I have a collection from all over the world going back to Turton and amounting to some hundreds and always find them interesting as showing the human aspects of the conchologists. I have many duplicates and would be glad to exchange lists if anyone is interested, but I am only concerned with letters from men who have made a real mark in the subject- not amateurs.

Letter from Prof. Dr. Krejci-Graf, Geologisch-Paleontologisches Institut der Johann Wolfgang Goethe-Universität, Frankfurt a.M., Germany. "The Geological Institute is interested in the exchange of fossil shells and in the procuring of the rarer species of Nayaidae. We are interested in books on recent and fossil ostracoda, otolitha piscium, coccolitha and discoasteridae. We are able to offer works on German and Roumanian Tertiary Otholitha ..."

Note from Dr. Myra Keen " Concerning the " Whatsit" genus of Minutes 35, p. 15: Dr. Stillman Berry has recognized this and a drawing I made of a similar specimen from Farallone Is. as a small brachiopod, Morrisia hornii Gabb (often recorded as Platidia seminula radiata Dall by authors). Subsequent study confirms Dr. Berry's identification.

** Note from Dr. Joshua L. Bailly Jr. " Dr. Axel Olsson, of the Academy of Natural Sciences, 1900 Race St., Philadelphia has written me that he is revising the Nassariidae and wants specimens from California , either dried or alcoholized. I have sent him some Nassarius tegula but have no other species at present. He is particularly anxious to get Nassarius fossatus.

Newspaper clipping of June 12,1953- " Miss Mary Nimitz, blond 21 year old daughter of Fleet Admiral and Mrs. Chester W. Nimitz, will enter a convent soon to become a Catholic nun. Miss Nimitz's parents are Protestants.

* Note* Miss Nimitz owns a very fine collection of shells.

It is amazing to me at time to learn about some correspondent of many years standing or to meet them in person. For example Dr. C.F. Menninger of the Menninger Clinic, Topeka, Kansas. Of course, I have known for years of his international reputation as an outstanding psychiatrist and hasten to add that our relationship has been confined to conchology. Dr. Menninger is a close student of our chosen field as well.

But to conclude this I have before me a copy of the Menninger Quarterly with two fine articles about Dr. Menninger " The Story of Doctor C.F." and " A Man Who Has Never Grown Old". This because Dr. Menninger celebrated his nintyeth birthday on July 11, and his photograph at this time shows a younger man than John Q. Burch feels and probably is.

Letter from Walter J. Eyerdam of Seattle, Wash -following the AMUPD convention in Pacific Grove "... tomorrow morning I go to Alaska again. Our homeward bound trip was enjoyed every minute with good weather, and lots of nice flowers along the way. I had never been on the Oregon coast before, so this was a special feature for me. We spent two morning working the beaches at low tide for shells and agates in Curry county. The poverty in species of marine shells along the Oregon coast has finally solved the mystery to me as to why I never succeeded in getting more than three or four species from collectors from Oregon. I doubt whether you could find 40 species along the whole coast"

** Note** Walter- You must not have stopped at the right spots. I recall making what I considered a killing on very unusual shells at several spots Depoe Bay for one.-

* I just happened to think that I started being Editor for the Conchological Club with the month of June,1941 - Whew- 13 years and now going on the 14th. Time somebody else took over.

Letter from Allyn Smith " Dr. Hanna, Ray DeSoussure and I organized an expedition to look for Monadenia circumcarinata (Stearns) based on the single specimen Ray found in April while looking for caves in the Tuolumne region. At long last as found it! All dead specimens , unfortunately, but quite a few of them, some in pretty good condition. At the moment we can't say whether it is possible to still find them alive but we suspect it is at a more favorable time of the year. Doc and I are agreed that in all our combined

snail hunting experience , we've never had a rougher go at them, tougher country to get into , or more difficulty finding snails under adverse conditions than this time. If Crawford found them where we did, we respectfully submit he was some snail hunter. He would have to have hiked miles and miles from the nearest habitations up and down canyons, steep canyons to get there. We plan to write up an account of the discovery for the Nautilus, including a map of the exact location so others can have a try for circumcarinata later. If they do, they'd better be in good physical condition and go in with a jeep (4 wheel drive) equipped with chains.

Mussel Poisoning- So far as I know no one so far this year has been poisoned by the mussels. This is probably due to the wide publicity given the matter. Simply quoting from a display article in the Los Angeles Times of May 18- excerpts " Poison they store is among the deadliest known to science" " same deadly type as that applied by South American Indians to the tips of darts shot from blow pipes.. Both poisons are alkaloids developed by nature in certain plants, and that which is stored in mussels and clams through the eating of plankton is one of the deadliest poisons known." " That water pollution has nothing to do with mussel poisoning is affirmed by John E. Fitch of the State Fish and Game Department. Individuals who attempt to gather mussels from the offshore islands of California, hoping to avoid contamination, are actually in more danger of poisoning than those who collect them in the bays he says. " " For many years the exact nature of the poison was unknown although it was suspected that the tendency mussels have for fastening themselves to the creosote covered pilings of piers and docks may have resulted in the contamination. However, in addition to the Hooper Foundation, the School of Tropical and Preventive medicine at Loma Linda have proved beyond doubt that at certain seasons of the year some of the plankton contains large amounts of the alkaloid which renders it poisonous. " The fatal dose for man is probably only a few milligrams, which makes the poison many times more powerful than strychnine, the minimum fatal dose for which is between 120 and 180 milligrams.

It is during the summer months that the plankton " blooms" and at this time there is a great increase of the particular species- Gonyaulax catanella- that contains the mussel poison. It is known that only a small quantity of this plankton in the water may be sufficient to cause mussels to become poisonous. ... It is the sporadic bloom of another species that causes the " red sea" such as that noted off the Florida coast from time to time which kills millions of fish. Mussels and clams, however, are unaffected by the deadly poison they store in their bodies by eating the organisms. " One of the most popular fish baits, mussels are plentiful along the entire Pacific coast and by many individuals are considered a finer delicacy than oysters." However, every summer the mussels and sometimes clams as well, contain the poison, which, when taken in sufficient quantities, has caused death to result within a few minutes from a rapidly progressive paralysis. The poison cannot be destroyed by boiling, and no specific treatment or antidote is known."

*** Enough of this and perhaps the reason I have written so much about this is because I am sure that my guardian angel has looked after me because I have always thought of a bowl of steamed mussels with a dish of hot butter- Oh Boy-

SENT IN BY A CORRESPONDENT

Recently in a little flyer put out by the United Grocers for housewives' information, I found the following gem under "Tips On Touring." I hope not many people follow the directions literally or seriously. This is what happens when a person who doesn't know a clam from a snail tries to condense a page of collecting instructions down to a half-page:

"Touring America on a "sea shell safari" is a delightful way to "dig up" vacation fun. Any shell collector worth his seaweed knows that shells differ not only from Atlantic to Pacific, but along the same coast. Collectors find the most specimens at low tide and full moon or after a storm.

The secret of collecting shells is to find those with two matching sides, whether separated or joined. The best method is to dredge in shallow water with a sieve and "pan" for shells. You can also comb the beach, picking up loose specimens.

As soon as you collect a specimen, make an on-the-spot identification as to its class and other pertinent data. A book on shells, illustrated with color plates, is an invaluable aid in classification. Next, clean your shells promptly to avoid decomposition of animal parts. Start by boiling them to remove fleshy parts. Boil smooth, highly polished ones only two minutes, others as long as 20 minutes. Remove remaining fleshy parts by delicate pulling and twisting. Finally, do surface cleaning with a stiff brush or a weak solution of muriatic acid.

When you have collected enough specimens for mounting, use a small brush, dipped into egg-white or light oil, to cover each shell and make it glossy. Then take a piece of cotton backing and arrange the shells artistically, along with different kinds of seaweed, coral, sea-horses and star-fish.

Place all in a picture frame, covered with glass. The result will be a delightful and decorative vacation memento."

Letter from John E. Fitch of the California Fish and Game

10 August, 1953

Dear Mr. Burch: Since the August meeting of the Conchological Club I have had a chance to check further on the occurrence of Corbicula fluminea (Muller) in the Imperial Valley area. I made a trip to the valley on July 6 (air temperature at 4:30 P.M. was 110.6 F.) and contacted the people at the Coachella Valley County Water District, Coachella. It is in their irrigation laterals that these clams are causing so much trouble. We made a check of the water system at several points in the vicinity of Mecca and then made a hurried survey of the Coachella Valley branch of the All-American Canal. The story as I see it is as follows: At present the flow in the main canal in the vicinity of the first lateral is about 600 second feet of water. The flow in the winter time is only about 1/10th this amount and last winter as each previous winter when the flow is down a project to remove tules, cattails, etc., is the order of the day. During 1952-53 winter these obstruction removal crews noticed Corbicula (dead of course) around the dried and exposed roots of all of these cattails etc. Then this spring for the first time they became a nuisance in the laterals which branch off the main canal. There is a flow valve and standpipe for each 40 acre piece of land throughout the entire Coachella Valley and it is these standpipes where the real trouble is encountered. It seems that when the valve is opened to irrigate any part of a particular 40-acre plot the clams flush out the standpipe, build up around the valve and eventually by their very numbers shut off the flow, necessitating shovelling them away or turning the valve on full speed to flush them out by force. At just a single standpipe in the Mecca area it was conservatively estimated over 1 1/2 millions of the Corbicula had flushed out. Samples were taken and it was found that a pint jar (randomly filled) held just over 500 clams. The largest was 24.6 mm in diameter and the smallest 7.5 mm (500 measured). There seem to be two modal groups, one at 12-13 mm and the other at 23-24 mm, indicating perhaps two age groups. There are 500 miles of these laterals in the Coachella Valley area (Riverside County) which are infected. In addition they are to be found all the way back to the Colorado River. This includes 36 miles of the All-American Canal from the River to the Coachella Branch (this 36 miles is of dirt banks). Then the first 66 miles of the Coachella Branch is also dirt lined and infested and the last 33 miles of it which is concrete lined is the section from which the irrigation laterals branch. These laterals are screened at the canal with 1/4 inch hardware cloth - it seems logical to assume therefore that the clams in the laterals result from the larvae of those clams in the main canal. I also feel it is safe to assume the entire irrigation system in Imperial County along the main branch of the All-American Canal is infested. This entire system is dirt lined. It would be interesting to check the Mexicali Valley to Hardy River area and the Arizona canals.

Undoubtedly these clams were accidentally introduced by fishermen from the Sacramento, San Joaquin area. Hundreds of fishermen make treks weekly to Lake Mead, Lake Havasu and Parker Lake taking rowboats and skiffs often partially filled with mud or water or both. The skiffs then get "bailed" out into the particular lake being fished and it is easy to see that a few thousand larval Corbicula take up residence. Some of these fishermen also take buckets of bait minnows with them and the water dipped from the Sacramento is dumped in the Colorado River. It might be of interest that the water temperatures in the canal where these clams

are so prolific varies from around 40 F in wintertime to just over 90 F in the summertime.

Hope this will be of interest to the Conchological Club and others,

Sincerely, John E. Fitch

The following is taken from the program of the 1953 meeting of The American Malacological Union Pacific Division- Asilomar, California-

Pacific Division Officers

Chairman Allyn C. Smith

Vice-Chairman Mrs. Elsie Chace

Secretary-Treasurer Ralph Fox

Special Committees

Registration & Reservations- Merton Hinshaw

Program- Miss Ruth Coats

Annual Banquet- Dr. Myra Keen

Reception- Mrs. Harry Turver and John Strohbeen

Program- Friday, June 12

8:00 Breakfast

9:00 Meeting called to order by chairman Allyn G. Smith

9:30 Appointment of nominating committee- announcements

Presentation of Papers

Mr. Andrew Sorensen, Mrs. Hazel Whelchel of Pacific Grove, Calif. and John P. Strohbeen of Santa Cruz, Calif.

Molluscan Predators and their prey

Dr. Wesley R. Coe, Scripps Institute of Oceanography, La Jolla, Calif.

Resurgent population of the bean clam, *Donax gouldii* Dall

Mr. Chester Wong, School of Tropical and Preventive Medicine, Loma Linda, Calif.

Observations on the reproduction of *Oncomelania nosophora*, the intermediate hosts of *Schistosoma japonicum*.

Intermission

Mr. Robert Robertson, Stanford University, Calif.

Collecting marine shells on Tahiti

12:30 luncheon

Dr. Myrtle E. Johnson, San Diego, Calif.

Chlamydoconcha orcutti.

Mr. Jens H. Ostergaard, Honolulu, T. Hawaii

Biology of the *Cypraea*

Dr. Arthur D. Howard, Rivera, Calif.

Heteropods collected on the Pacific Coast

Intermission

Dr. H.O. Orcutt, California Dept. of Fish and Game, Stanford Univer.

Oyster Culture

Dr. S.S. Berry, Redlands, California

Molluscan notes from the Puerto Penasco Region, Sonora

6:00 Dinner

8:00 Visit to the Museum of Natural History, Forst and Central Avenues, Pacific Grove, Calif. Courtesy of the Museum Board of Trustees and Staff.

Saturday, June 13, 1953

8:00 Breakfast

9:00 Announcements

Dr. Myra Keen, Stanford University, Calif.

A critique of Dr. J. Brookes Knight's paper "Primitive fossil gastropods and their bearing on gastropod classification"

Yoshio Kondo, Bernice P. Bishop Museum, Honolulu, T. Hawaii

The Genus *Partula*

Mr. E.P. Chace, Lomita, Calif.

"The Universal Conchologist" by Thomas Martyn

1. The first part of the report deals with the general situation of the country and the progress of the work during the year.

2. The second part of the report deals with the results of the work done during the year.

3. The third part of the report deals with the financial statement of the year.

4. The fourth part of the report deals with the general remarks of the committee.

5. The fifth part of the report deals with the conclusions of the committee.

6. The sixth part of the report deals with the recommendations of the committee.

Program (con)

Mr. Edward P. Baker, Downey, Calif.

Interesting others in marine life

Mr. V.D.P. Spicer, Centralia, Washington

Shell collecting on Midway, The Territory of Hawaii and a comparison of the molluscan fauna with that of the large islands.

12:30 luncheon

William K. Emerson, Museum of Paleontology, University of Calif. Berkeley, Calif.

Palaeoecology, Neo-Ecology, and Marine Mollusks.

Kark W. Greene, Children's Museum of Honolulu, T. Hawaii

Cones from Hawaii

Walter J. Eyerdam, Seattle, Wash.

Freshwater shells from Lake Miragoane, Haiti

Intermission

R.R. Talmadge, Willow Creek, Calif.

Senile Haliotidae

Dr. Leo G. Hertlein, California Academy of Sciences, San Francisco Calif.

Ocenebra erinaceoides and allied species

Business Session

6:00 Annual Banquet

Dr. John S. Garth, Allan Hancock Foundation, University of Southern California, Los Angeles, Calif.

The New Frontier (A motion picture and lecture)

Mrs. George W. Austin passed away on the 15th of July. She was one of our oldest members and as a matter of fact, it was by her recommendation that I became a member of the Conchological Club of Southern California many years ago. Mrs. Austin was always an enthusiastic collector and through the years built up perhaps the largest private collection in Los Angeles County. She is survived by her husband, Mr. George W. Austin.

Mr. Austin advised that the collection had been purchased by the science department of the Los Angeles County Museum and the collection will be broken up and specimen shells for sale as usual by the curator Dr. H.R. Hill.

We have a card from Dr. Joseph Bequaert of the Museum of Comparative Zoology, Harvard University upon his return from the meeting of the American Malacological Union in Kansas. He advised that the 1954 meeting is to be held at Durham, New Hampshire, the date to be decided upon later.

The Berkeley, Calif. Daily Gazette of July 10, 1953 carried a large display article about the work of Dr. Rudolf Stohler. Dr. Stohler collects some 15,000 specimens each year most of them along coastal water in the intertidal zone. He is said to pile up 12,000 miles a year mileage just for his specimen hunting, and works an average of 100 hours a week. The work is to collect specimens for study in the University of California's zoology department. Of course, the collecting is in all groups and the methods of preparation for study are of considerable interest. The use of plastic in mounting specimens is becoming increasingly popular and satisfactory.

MINUTES OF THE CONCHIOLOGICAL
CLUB OF SOUTHERN CALIFORNIA.

August 4, 1953

The president, Mrs. Harry Turver, called the meeting to order at 7:45 p.m. in the Los Angeles County Museum, and welcomed twenty-one members and guests.

The minutes of July 7th were read and approved. Mrs. Turver announced: "It is with deepest sorrow that our member H. A. Edwards has been called to that City not made by hands, Eternal in the Heavens. With the loss of a friend, we have gained a memory to cherish, an ideal to which to aspire, a thought to control us. He has followed the star over the hilltops beyond our vision into the valley of peace. Sleep on, dear H. A. Such lives as thine have not lived in vain, but hold an influence, rare, divine on lives that here remain."

The secretary read a letter from Mrs. Edwards thanking all for their thoughtfulness. A letter was read from the treasurer saying she regretted not being at the meeting because she was on vacation. The secretary presented a bill of \$10.35 from the Aloha Florists. It was moved by Dr. W. O. Gregg that the bill be paid and was so ordered.

Mr. Burch, nomenclature chairman, gave a report.

Dr. A. D. Howard of the Educational Committee reported on Methods and Laboratory Techniques on dredgings from the S. S. Valero IV of the Hancock Foundation at the University of Southern California.

An interesting growth series of *Haliotis assimilis* was shown by a new member, Mr. D. L. Burford. This series convinced all who saw it that *H. sorenseni* and *H. assimilis* are distinct biological entities.

Mr. John Fitch brought a box of fine and unusual specimens of Hinnites. These specimens were generously given to all Club members who cared to receive them.

Miss Ruth Coats announced the first class for new members would be held Sept. 9th, second Wednesday, at 7:30 p.m. at 4206 Halldale.

It was moved and so ordered by Mr. Cate, that the secretary be instructed to order Club stationery. It was ordered that a card be sent to Mr. Lloyd Berry. It was voted to have a picnic September 6th.

Miss Ruth E. Coats was the speaker of the evening. Her subject was "the genus *Calliostoma*," The lecture was both informative and interesting and a beautiful exhibit of specimen shells illustrated her program. This was appreciated and enjoyed by all.

The meeting was adjourned, with the members remaining until 10, to study exhibits and to exchange shell experiences.

Mrs. John Q. Burch, secretary.

SOUTHERN CALIFORNIA CONCHOLOGICAL CLUB

MONTHLY MEETING

September 1, 1953. 7:30 p.m.

Los Angeles County Museum. Exposition Park. Southeast entrance.

SUBJECT: West Coast Olividae. You are invited to bring your specimens for comparison.

Class for new members will meet for the first time September 9. This meeting will be held the second Wednesday of each month. The hour and place will be announced at the regular September 1, meeting.

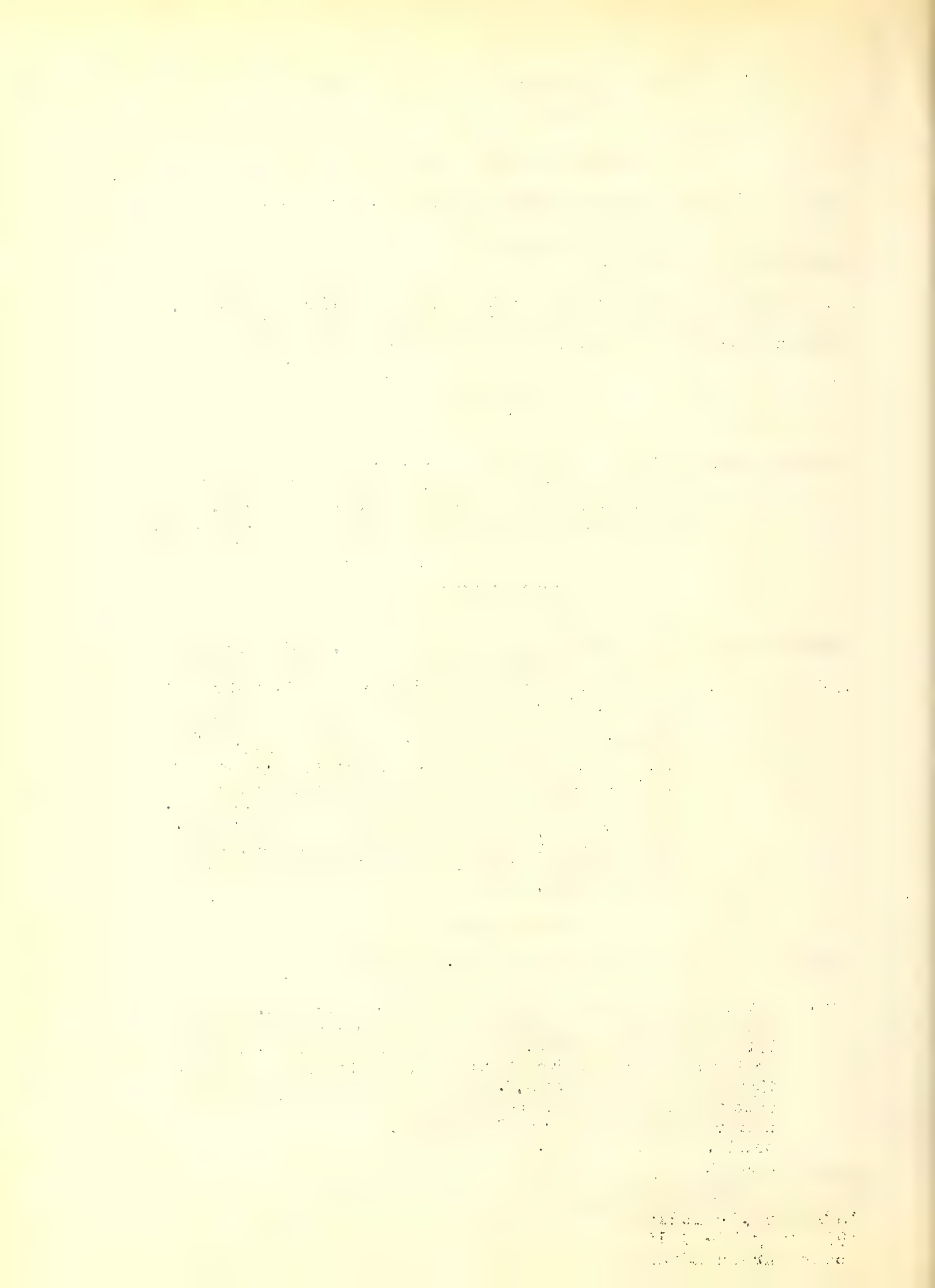
September 6th. A picnic will be held in "Elder Annex to Point Fermin Park" on Paseo Del Mar, west of Gaffey St., San Pedro, California. Everyone bring his own food. Field-leader: Harry Turver. Telephone: Logan 9-2069.

September 13th. Members are invited by Miss Ruth T. Coats to call at her home. Pot-luck, if you are there for luncheon from 12:00 to 1:00. If you care to go by train, take the Santa Fe at 8:10 Standard Time (9:10 Daylight Saving Time) at Los Angeles Union Station. The Santa Fe stops at Oceanside where you will be met. The train returns at 1:30 (2:30 DST) or 4:00 (5:00 DST). The ride takes one hour and forty minutes each way. If you are planning on attending, please notify the secretary, Mrs. John O. Burch, 1584 W. Vernon Ave., Los Angeles 62. Telephone: Axminster 3-5710 or Axminster 2-7965. Please notify her not later than Friday, September 11.

Written by Howard Arden Edwards, February 17, 1948:

Life to me has been a great and wonderful adventure. A new trail lies ahead. I do not see how it can hold more beauty than the one just traversed. I am eager and curious to see what awaits me over this new horizon. Whatever it may be, I am sure that the Master will have given it more love, more beauty, and if possible, more friends to greet me. I go with a laugh and a smile; do you, likewise.

1884 Sept. 5- Indiana
1953 July 19- California
Howard Arden Edwards



MINUTES 131

SEPT 1953

CONCHOLOGICAL

CLUB OF SOUTHERN

CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax 3-5710
Home Ax 2-7965

CORRECTION

We have been urgently requested to correct an error in our Minutes #130, p 11 in our comments about the passing of our senior member, Mrs. George Austin. It was mentioned that the collection and library had been sold to the science department of the Los Angeles County Museum. Mr. Austin, who advised us of this was apparently in error.

The collection and library was bought personally by Dr. H.R. Hill and should not be confused with the scientific collection of the institution from which we are informed no specimens are offered for public sale. We regret the misunderstanding.

MOLLUSKAN PREDATORS AND THEIR PREY. --- EXEMPLIFIED.

BY

Andrew Sorensen, John P. Strohbeen & Hazel P. Whelchel

Most of the marine Gastropods are Predators, that is, they are carnivorous. *Haliotis* and *Acmaeas* are the chief exceptions.

The Pelecypods, clam-like mollusks, feed almost exclusively on plankton and detritus, while at the same time they themselves furnish the main food supply for the Gastropods.

In Nature only the Industrious may survive. The Predators must hunt for much of their well-concealed Prey that lives in the sand as much as a foot or more in depth. But many of the Predators - *Murex*, *Polinices*, *Olives* - have also developed the ability to travel deep in the sand. When they find a clam they bring it up and proceed to effect an opening through which they can consume the unhappy victim. Such an opening may be made in various ways, but it is mostly done by drilling. The *Polinices* are able to hold a clam with their large WATER-INFLATED foot, while they drill a hole with their sharp-toothed radula through the thickest part of the shell next to the hinge. Many of these holes look like they were countersunk, for they were began large and ended smaller.

P. lewisii grows to a large size. It is abundant in shallow water along our West Coast, and as it is a heavy eater it becomes very dangerous to our bays. Morrow Bay in San Luis Obispo County has been hard hit. More than half a dozen species of Pelecypods that formerly were very abundant there are now nearly extinct, their dead shells with the tell-tale drilled hole are now found in their stead. *P. lewisii* has even been blamed for the total failure of an experiment made by the late Dr. Harold Heath, former Director of Hopkins Marine Station. None of the *Mya arenaria* clams he planted can be found.

There are other very destructive Drills: *Urosalpinx cineria* has done immense damage in Eastern oyster beds. It has also been introduced to the West Coast, where it is now well established in San Francisco Bay and in the Humboldt County oyster beds. Further south, on the West Coast of Mexico is found another one-inch long, very destructive Drill. Its name is *Eupleura muriciformis*. It is plentiful from Punta Penasco to Mazatlan and probably south to Panama. At San Carlos Bay and other places we would find two-inch hardshell clams (*Chione succincta*) lying on the sand with two or three *Eupleura* firmly attached to each. After removing the latter we saw that holes were drilled through the thick shell where each one had been. On a narrow reef in San Ramon Bay, John Strohbeen saw *Eupleuras* moving over the reef literally by the hundreds or perhaps by the thousands. They may have been migrating to new pastures in search of a more ample food supply.

In the Mexican bays there are very few *Polinices*, but there are plenty of *Murex* to prey on the clams. *Murex bicolor* and *Murex nigritus* are there en masse. They burrow deep in the sand till they find a clam they can handle, then they bring it up and hold it between their shell and operculum, with the ventral margin (thin edge of the two valves) down. With the clam in that position the radula is able to quickly file a long opening through which the clam is eaten. *Murex* never drill, popular opinion notwithstanding.

There are many other kinds of Predators. The common snail on our coast (*Thais emarginata*) moves about on the rocks and eats the eggs laid in crevices by other

Mollusks. *Thais kioskiformis* climbs up on the aerial roots of Mangrove bushes to eat the small oysters (*Ostraea cumingiana*) living there. The large *Fasciolaria princeps* hunts up the Turbos, but it will tackle anything its own size.

The Olives seem to be more patient. They neither drill nor file, but allow Nature to open the shell for them. They simply hold it till the animal can no longer do without oxygen, or the muscles have become exhausted from holding the shell closed. The slightest opening, and the Olive slips its radula in and the show is over. *Oliva venulata* seems to prefer *Chiones*. We have counted nine of them completely surrounding a *Chione*, while the larger *Agaronia testacea* nearly always is found with a *Donax punctastriata*.

In spite of the Predators which may cause the elimination of some species, other species are becoming more numerous, and even some new ones are evolving. Primitive man lived off the country, but he took only what he needed, hence the "Balance of Nature" was maintained. The natives of the Pacific Islands have led a contented life there for centuries, but see what happened to them when so-called Civilized Man came. He took not only for his needs but for profit. He is the greatest Predator of all. See what the Fishing Industry had done here in California to the sardines & abalones. It will take strong measures to bring these mollusks back. IT DOESN'T PAY TO KILL THE GOOSE THAT LAYS THE GOLDEN EGG!

MOLLUSCAN NOTES FROM THE PUERTO PENASCO REGION, SONORA.

(Abstract)

by

S. Stillman Berry.

The paper presented in informal summary of the known molluscan fauna of the area, totaling 696 species (since increased to 704). A relatively small amount of dredging at shallow depths by Messrs. Lowe and Turver has served to increase the list only slightly as the majority of the dredged species are increasingly being brought to light in intertidal collections. Field notes from the speaker's three collecting trips in 1948, 1949, and 1952, during which no dredging or diving whatever was done, were excerpted and discussed. The most notable observations were probably those on the specialized habitats of species of Crepidula, Hipponix, various "vermetoids," certain Turrids, and the limpets, as well as on oviposition and other reproductive phenomena in Turritella broderipiana, Hanetia pallida, and Octopus digueti.

The bulk of the fauna, despite the relatively high latitude, is, in conspicuous contrast to that just opposite on the ocean coast of Baja California, distinctly tropical and in high degree even Panamic. However, a small yet tangible temperate element is present. The representation of the parasitic family Pyramidellidae is particularly noteworthy, nearly 90 species having been taken to date. Other rather richly represented groups are Arca (s.l.), Cardium (s.l.), Leptonidae, Veneridae, Tellinidae, chitons, Acmaeidae, Cyclostrematidae, Calliostoma, Crepidula, Murex (s.l.), Olividae, Cancellaria, Conus, Turridae, and Terebra. Littorina is more curiously rare.

It is hoped eventually to work up the material and data into a general report on the fauna, but in view of the fact that the last brief foray there in May 1952, captured no less than 75 species not previously obtained, it is clear that the time for final summary is not yet here. Many of the species taken are undescribed.

NEO-ECOLOGY, PALEOECOLOGY
AND
MARINE MOLLUSKS
(Abstract)

William K. Emerson
Museum of Paleontology, University of California.

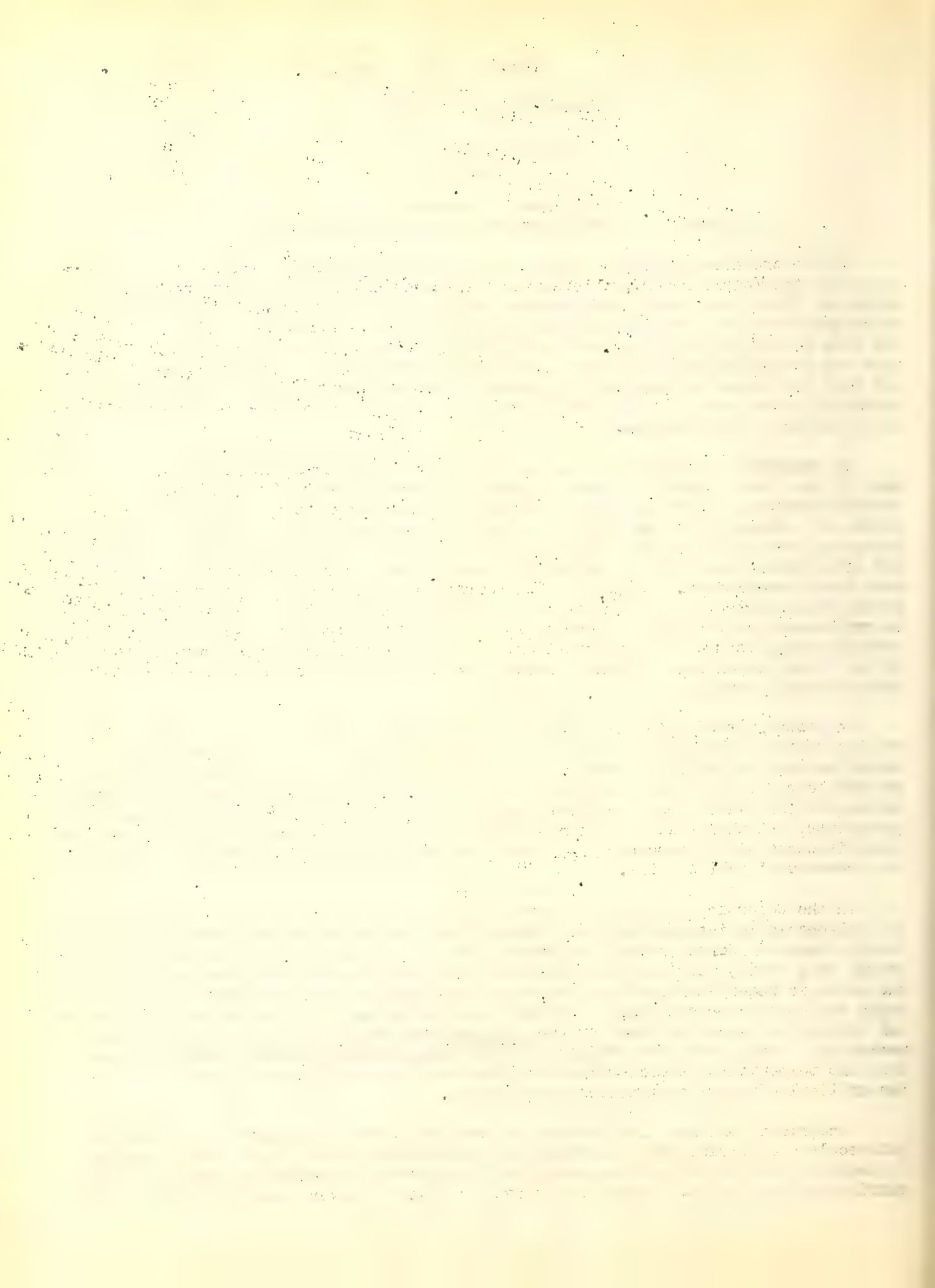
Unlike the neo-ecologist, the paleoecologist is required, because of the limitations of the fossil record, to evaluate the ecological factors under which fossil organisms lived on a purely interpretive basis. It must be assumed that conditions which existed at the time the fossils were living are comparable to those under which the same or similar organisms are found living today. This assumption, being based upon the Law of Uniformitarianism, i.e. that the "present is the key to the past," and that conditions responsible for former biological and geological phenomena are essentially the same as those prevailing today, is the paleontologist's primary tool for ecologic interpretations.

In evaluating a fossil assemblage, the paleoecologist is restricted by the nature of the fossil record to those elements of the original fauna which possess preservable remains. Unfortunately, a natural assemblage of the preservable constituents of a fauna is seldom found; instead, a death assemblage (thanatocoenose), representing not only a portion of the organisms living in the depositional environment, but also foreign elements (allochthonous forms) from other environmental sources, is most often encountered. Paleoecologic evaluations must be based upon the faunal elements which reflect the nature of the environment of deposition. Regardless of the incompleteness of the fossil faunule, it has been shown that it is possible to make certain fairly accurate interpretations of the Tertiary record based upon a knowledge of the living organisms, as many Tertiary genera (and species in some cases) have a geologic range extending into the Recent.

In assuming that a fossil assemblage occupied an ecologic niche similar to, if not the same as, that occupied by their extant descendants, certain limitations should be kept in mind. For example, possible changes in physiological tolerances may not be reflected in the morphological features which are available to the paleontologist for evaluation; such changes could affect habitat and distributional requirements, but when a large assemblage substantiates the inference for a single species, it seems highly probable that there has been no significant changes in habitat requirements of that species.

In the Cenozoic, mollusks are very abundant and constitute significant indicators for paleoecologic interpretations. Although the shallow water molluscan fauna of the Pacific Coast of North America and the general distribution of its components are fairly well known, very little information is available concerning the life histories and ecologic requirements of the species. Even less is known regarding the moderate depth and deep water species. Unfortunately, only a small portion of the vast material dredged off the West coast by the Albatross and the Velero III and IV has been worked up. Were these data available by stations, including depth, bottom character, and temperature, a much better insight into the environmental requirements of the critical offshore communities would result.

Recognizing the need for comparative data in order to adequately evaluate the paleoecology of Pleistocene megafaunas of Southern California, Alex Clark undertook by means of dredging operations, to survey the near-shore molluscan communities occurring off Long Beach. Though this investigation was never completed, Clark (1933)



briefly recorded the findings in abstract form; these data have been utilized for paleoecologic interpretations of some late Tertiary mega-faunas of California. Keen and Frizzell (1939) have tabulated general ecologic data for some West coast pelecypod genera; Durham (1947) has compiled bathymetric distribution records of 964 gastropod genera occurring in all seas.

A few offshore faunal lists, in which bathymetric and bottom data are recorded, are available to West coast paleontologists; notable among these are: Kelsey (1907) for San Diego, T. and J. Q. Burch (1942, 1943) for Redondo Beach and Del Monte, and Smith and Gordon (1948) for Monterey Bay. While a number of faunal lists representing mainly shallow water species have been compiled for West coast localities, these are of little value in paleoecological studies as only geographical data are generally recorded. The Minutes of the Conchological Club of Southern California provide the most valuable single source of neo-ecological data pertaining to the West coast mollusca. However, considerably more information is to be found scattered in the voluminous West coast Molluscan literature; if these records were compiled, they would constitute a valuable aid to the paleoecologist.

In recent years, some intensive ecological studies have been conducted on the West coast, usually in the vicinity of marine stations, e.g. Puget Sound (Shelford, et al., 1925, 1935), Monterey Bay (Hewatt, 1937), and Elkhorn Slough (MacGinitie, 1935). Most of the ecological studies are of little value for paleoecological interpretations as emphasis has been placed upon the recognition of a complex classification of faunal and floral marine communities based upon the primary elements of the populations. Such investigations have usually ignored the totality of the communities and have often neglected habitat tolerances and life history studies. In order to provide the paleontologist with adequate data for paleoecological interpretations, future neo-ecologic investigations should include; (1) a study of the faunal components of the basic environmental types occurring at each locality, (2) a comparison of similar environmental types with those occurring at several geographically isolated localities, and (3) time allowance of sufficient magnitude to reflect the influence of seasonal and cyclic factors (cf. Woodring, et al., 1946).

THE UNIVERSAL CONCHOLOGIST
THOMAS MARTYN.

-by E. P. Chace

Some time ago I purchased a copy of "The Universal Conchologist" by Tomas Martyn, from our friend John Q. Burch. I found it very interesting in spite of the fact that it was a clipped copy, 69 miscellaneous plates without any Explanatory Tables. I found that I wanted to know more about Martyn's books. Dr. Dall in 1905 published quite an article about the copy that was at the United States National Museum and I was able to locate several other articles and notes about other copies. But first-- Who was Thomas Martyn? Dr. Dall said in his first notes about the Universal Conchologist "The facts now discoverable about his life and even his publications are disappointingly scanty."

The Dictionary of National Biography refers to him as a "Natural History Draughtsman and Pamphleteer flourishing between 1760 and 1816 in London. He was evidently a man of education, used correct English, knew French and some Latin and possibly some Greek. An early copy - possibly his first, was sent to Pope Pius VI, and was awarded a Medal for it. He published on other things besides shells. First was an essay on Ballooning, next "The Universal Conchologist." Some other things, then "A Natural System of Colors," by Moses Harris and edited by Martyn.

Now "The Universal Conchologist" -- First: it was made in at least 2 sizes. Folio 16 1/8 x 16 1/8, and 4to 11 x 12 1/2, or near to those measurements. Some volumes apparently were trimmed closer than others, by the binders. As near as I can add things up, a complete copy would have the following units:

Frontispiece - colored Turritella terebra, Lam. labeled in Greek: Aphrodite.

Titlepages. There are two with different wordings. Engraved. Also a printed one. Dates on these two pages: 1784, 1785, 1786 and I believe 1788 or 89. Dedicated to the King, with plates of medals.

Explanatory tables, one for each 40 plates, engraved. There seems to have been at least 2 printings of these as some omissions and some misspellings were corrected in later copies. These differences are commented upon by both Dall and Iredale.

An Introduction. In my copy, pages 2 to 23 inclusive. In English & French on opposite pages.

A Preface. In my copy, pages 26 to 35, in both English and French as in the introduction. In my copy this preface tells of Martyn's establishing an Academy or Seminary for the training of young and promising artists who might not otherwise be able to develop their talents.

Three letters from Baron Born, of Vienna are included. These are dated August 18, 1787; Nov. 23, 1787, and June 15, 1788, and bound in a book whose title page says 1785.

The Plates. According to Martyn, 40 plates made a volume, although they were frequently bound 80 plates in a binding.

That's the contents. The bindings vary. My copy has: one title page "exhibiting the figures of every known shell;" the printed title page; Introduction and Preface;

Letters from Baron Born; 69 miscellaneous plates, some from each of the 4 regular volumes and 10 plates that are not given in the Chenu reprint. Also several of the plates are duplicates and two of these show a single view (9 duplicates).

I know of the following copies in the United States:

- United States National Museum. (prior to 1905). A copy of 80 plates plus frontispiece, 1 title page, and 2 explanatory tables.
- Dr. S. S. Berry. (1913). A first edition copy of 80 plates, frontispiece, and 2 explanatory tables.
- John B. Henderson. (1907). A folio copy, 16 x 16 inches. Elegantly bound. 80 plates dated 1784, 2 title pages, and explanatory tables.
- A. N. S. P. (prior to 1905). A copy of 80 plates & tables.
- Stanford University. A copy of 161 plates (all 4 volumes).
- C.H. Clapp. (1914). A 2-volume copy in one binding. Full Tree Calf. Frontispiece; 2 engraved title pages plus the printed one; 2 plates of Medals; 2 explanatory tables.
- Boston Society of Natural History. (1917). 4 volume atlas, 4to. Frontispiece; 2 engraved plates of medals, 160 plates (322 figures). Explanatory tables.
- Bryant Walker, described in the Nautilus, vol. 32, page 28. A 4 volume copy in 2 bindings of finely tooled calf. Volumes 1 & 2 are close to those described by Dall. Volumes 3 & 4 have no titlepages, only explanatory tables. There are 43 plates in volume 3, 52 plates in volume 4. Walker comments "bound in with the original indices is a mss. index written in a large engrossing hand." The plates are numbered in the upper right-hand corner in ink and evidently by the same hand that wrote the index. The nomenclature of the written index is apparently that of Gmelin, whose Systema Natura was published in 1782-1792." Many other comments. Everything in the makeup of this copy indicates that it must have been one of the latest copies issues - the entire omission of plate 156 would seem to indicate that there were no copies left of that plate.
- The Museum of Comparative Zoology. A beautiful 2 volume copy complete as any set that I have seen. Bill Glench - also a "clipped" copy. Excess plates were rejects as far as I have been able to trace. They were brought together and sold for a smaller price.
- Ruth Coats. 2 volumes bound in one. 80 plates and frontispiece; 2 engraved titlepages plus 1 printed one. Plates of medals.
- John Hopkins University. Reported by John Burch, who sold it to them.
- San Diego Society of Natural History. Copy with 40 plates. Dr. Bailly says of it: "may be a very early copy, when Martyn had only 40 plates or may be volume 1 of a broken set."
- E. P. Chace. A clipped copy with 69 plates. No tables and no frontispiece.

This makes a total of 13 copies that I know of in this country and so far as I know only 4 of these are the complete 160-plate copies. I also know of the following:

- Sydney Museum, Australia. A 4 volume copy commented on by Dall.
- The British Museum, London. 4 volumes.
- M. E. R. Sykes, London. 4 volumes per Dautzenberg.
- Dautzenberg apparently had a copy of his own. 4 volumes.

Iredale published some notes in Proceedings of Malacology Society of London, 1921, comments on differences in the copies that he had studied. He had 4 copies plus the one in the British Museum to base his notes on. He says: "many insignificant differences suggest different impressions of the Explanatory plates."

R. Winckworth, in Proceedings of the Malacological Society of London, 1929, comments: "where the Martyn names are nouns they stand alone, and where they are adjectives they are attached to a Genus name, and in some cases the genus has to be supplied by guesswork. There are also trinomials. Martyn knew Linnaeus' work but is binomial by accident. I am forced to the conclusion that one must most reluctantly disregard his beautiful work as far as nomenclature is concerned.

Dr. Berry has pointed out that 7 of the accepted Linnean names were trinomials when published. Some of these we have converted to binomials by the insertion of a hyphen between the last two names and are still using them. In other cases we have dropped one of the names.

My own opinion is that technically the Universal Conchologist was a custom-made book rather than a regularly PUBLISHED book as we use the term "published" at the present time. As such it is not available as a source of names for our shells. However, the Martyn names have been in universal use for so long, and they are so well-known that it would cause less confusion to accept the Martyn as a whole, and throw out the few impossible names, than it will to throw out all the Martyn names.

NEW PUBLICATION

West American Razor-Clams of the Genus Ensis By S. Stillman Berry
Transactions of the San Diego Society of Natural History, Vol. XI,
No. 15, pp. 393-404, Fig. 1-4.

This paper is prepared with the customary thoroughness of all of Dr. Berry's work. The descriptions and figures are clear and unmistakable. The interesting thing is, of course, that a new name has been added to our faunal list and another no doubt deleted. Ensis californicus Dall is a name applied to our local Ensis for we might say "time out of mind", and is no doubt well known to most local collectors although good specimens of it are far from common. The type locality of this species is 14 fathoms off San Pedro Martir Id., Sonora, Mexico; U.S.F.C. Str. "Albatross", Sta. 3013.

Ensis myrae n. sp. is described in this paper. This is the local species we have known by the name of Ensis californicus, but Dr. Berry shows that we have two species on this coast, and that the local species newly described Ensis myrae (named in honor of Dr. Myra Keen) with type locality San Pedro, Calif. is distinct from the southern form which will retain the name Ensis californicus.

** Note- This editor has collected many specimens of the local species usually from a bathymetric range of about 25 fathoms, but does not have a single specimen of the southern form. So has specimens of Ensis myrae and would like very much to see or have a specimen of the true Ensis californicus.

Basteria- Vol. 17, No. 3, Pag. 33-48 15-VIII-1953- The organ of the Malacological society of the Netherlands- contains the following papers- Lamellibranchiata autochthoon nieuw voor de Nederlandse fauns (with an English summary) by J.A.W. Lucas
Notes on some East African Gulellae by Bernard Verdcourt- well illustrated paper in English.
Notes sue les limaces 1. A propos de Milax niger (Carl Pfeiffer, 1894) par C.O. Van Regteren Altena.

MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA
September 1st, 1953.

The president, Mrs. Harry Turver, called the meeting to order at 7:40 o'clock in the Los Angeles County Museum, and welcomed twenty-five members. Mrs. Turver extended sympathy in the name of the Club to the Secretary, Mrs. Rose Adams Burch, whose mother, Mrs. Maud Adams Dull, passed away August 7, 1953, at her home in Newhall, Calif. She also announced that Mrs. George Austin, an earlier member of the Club, although not active the last few years, had recently passed away.

The Minutes of the August 4th meeting were read and approved. Nomenclature reports were given by John Q. Burch, Dr. W. O. Gregg, and E. P. Chace. The President called attention to the prize offered early in the year for the most unusual shell or outstanding exhibit, and at this point, she exhibited a beautiful specimen of a "true watering pot," an aspergillum.

Mr. Turver reported on preservation of starfish, saying they might interest more collectors if they knew how to treat them. Mr. John E. Fitch announced that September 13th, 10 a.m. was to be Starfish Day at Middle broadwater at Long Beach, where some 200 divers would collect starfish - some as large as 30 inches across. These Echinoderms are destroying useful shell life. Mr. Fitch gave the following observation on *Haliotis assimilis* and *Haliotis sorenseni*: a series of *H. assimilis* 1/4 inch to 7 1/2 inches, taken alive have bright orange flaps of mantle. *H. sorenseni* flaps of mantle, bright purple - the smallest one taken was 2 inches greatest diameter. Few *H. sorenseni* are found off the coast, most being taken around off-shore islands in 35 feet and deeper.

The following announcements were made: A Museum is located at Willow and Lime in Long Beach. There will be a picnic in San Pedro, September 6th at 12 o'clock. A study class will be held at 4206 Halldale, Los Angeles, September 9th at 7:30 with Miss Coats as leader. A trip to Miss Coats at Carlsbad, California, on September 13.

Mr. Fitch presented *Cypraea spadicea* Swainson, taken off La Jolla in 65 feet (Aug. 25, 1953), and 90 feet (Aug. 28, 1953), by divers John E. Ritch and Conrad Limbaugh. There was one beautiful specimen for each member present.

Mrs. Turver presented the secretary, Mrs. Burch, who spoke on West Coast *Olividae*. She traced trade routes of 2000 or 3000 years ago from California or / and Lower California, to Arizona, New Mexico, Utah, and S. E. Colorado. The three California species discussed and illustrated were from the Burch and Turver collections.

The meeting adjourned at 9:30 to study exhibits.

--- Mrs. John Q. Burch, secretary

" See what a lovely shell,
Small and pure as pearl,
Lying close to my foot,
Frail, but a work divine,
Made so fairly well,
With delicate spire and whorl,
How exquisitely minute,
A miracle of design! "

Tennyson

We have on our desk a sizable stack of clippings, also personal stories about the great Starfish Hunt on the San Pedro Breakwater, sponsored by the California Fish and Game. This hunt seems to have attracted a lot of attention and publicity, and the catch is also of startling interest- for example in the picture before me from the evening press- Say this starfish is stated to be 36 inches in diameter which is in itself startling and it looks all of that and also pardon the writer please because after all they have been calling old John " Gramps" for a lot of years, but again please excuse ' Gramps' if he indulges in a private try at a " wolf call" when he looks at the gorgeous doll holding this record size starfish. Oh Well- I sympathize with Poche De Leon in that Fountain of Youth hunt. But fear " Them days is gone forever".

But to return if possible to a serious consideration of this project. It seems that starfish in unprecedented numbers have been accumulating in vast numbers around the L.A. breakwater. The obvious result has been that the population of mussels and other life, the normal prey of starfish has suffered a great decline. The idea of John Fitch and the Calif. Fish and Game was to combine sport with something of a practical nature. So a sporting deal was made with the local skin divers - prizes offered for record sizes etc. and the result was about a ton of starfish quickly gathered. Anyway the shellfish should be breathing easier.

/ r

Our member Mr. Buford just called yesterday with an interesting story- It seems that the supposedly almost extinct Sea Otters of middle California are on the increase, and how. One of the commercial abalone divers told of a large bed of large legal size and fine clean red abalone (Haliotis rufescens) off of the mouth of Salmon Creek, Monterey Co., Calif. being practically exterminated by the otters. Story is interesting in a lot of ways. In the first place we think at times of animals having a limited intelligence and never confess that any of them have reason, but any animal must have something as some of us might say " on the ball" to pick up a rock and whack an abalone open and eat from the broken shell. Oh well- we protect both abalones and otters from man but not from each other.

Speaking of smart animals though I am reminded of a recent visit by Charlie Allen of the Los Angeles Zoo. Charlie was picking out some books from the shelves of our shop and I noted that he was picking books about the intelligence of animals etc. So just for conversation I asked him " Just how smart are these animals you have?" Charlie said " Well- dont really know but an example this morning- I always look over my animals every morning and I stopped in front of the cage in which we have an ape. When we first put him in we put a hydrant running a small stream for his water, but he had too much fun with that- would stop it with his thumb and squirt water on all visitors. Obviously that wouldn't do so I had the brain storm of giving him a cup with water coming up from the bottom so he could drink and not be able to squirt. This morning I stopped in front of his cage and he jumped up and down and stomped with one foot and stuck his thumb in the cup. I wondered what was the matter with him and he did it all over again. Then I checked about and noted that someone had turned off his water." I wonder how any of us could have told we needed water any better without being able to talk.

Los Angeles State College is offering a Saturday Class in Ocean Study- Div. of Nat. Sci. Nature Study 130 o 4 Week ends Sept-Nov. 1 unit lab credit Nat Sci. Field, Museum, and Aquarium study of marine life; underwater observations and kodachromes . Begins Sat. Sept. 26th with 2 days at Catalina Island. Registration by permission of the instructor, Dr. Roland Case Ross.

** If you can get in on this course by Dr. Ross you are very fortunate. Take it if you possibly can.

Los Angeles Times Mon. Aug. 31, 1953- SC Researchers Find Deep Basin Off Ensenada- Discovery of an 8400 foot deep basin six miles long and two miles wide on the floor of the Pacific ocean off the west coast of Mexico was announced yesterday by the Allan Hancock Foundation for Scientific Research at the University of Southern California.

The newly surveyed area, covering 1500 square miles-larger than the state of Rhode Island- was named the Valero Basin because it was found from the research ship Valero IV, operated by the Hancock Foundation.

Dr. Kenneth O. Emery, SC professor of Geology and one of the world's leading oceanographers, conducted the survey as a field trip project of his class in oceanography Oct. 10 to 12, 1952. He published his findings in the September issue of the American Journal of Science.

The Valero Basin lies about 100 miles off Ensenada, Mexico, between the continental shelf and the coastline, at latitude 31 deg. and 30 minutes north and longitude 118 deg. and 30 minutes west.

It is the deepest point of the whole region east of the continental slope and north of that latitude. Its water is different from that of the open sea in that it is nearly the same temperature- 37 deg. Fahrenheit from a depth of 6000 feet to the bottom, has almost the same salt content and is of abnormally low oxygen content between 6000 feet and 8400 feet.

During the cruise nearly 120 statute miles of new sounding line were recorded in the area. Soundings were recorded automatically on tape and also read visually at one minute intervals from the flashing dial of an echo-sounder.

Walls of the Valeo Basin are fairly straight, from 3000 to 3600 feet high and have slopes of five to 10 degs. The bottom is flat.

L.A. Herald and Express- Thur., Aug. 27, 1953- PEARLS- Mississippi Hunt on After 40 Years- McGregor, Iowa- They're hunting pearls again in the Upper Mississippi River near here after a lapse of nearly 40 years. Clamming and pearl-hunting was a boom industry here in the 1890s, but the river was "clammed out" several years ago. Now fishermen report the clams are coming back. Two fishermen- Albert Langsford and Norman Delphy - have reported finding large pearls. Langsford sold his for \$400 and Delphy's pearl brought \$225. Even if no pearls are found, the fishermen can always sell the clam shells. Pearl button factories pay 2½ cents a pound for them.

L.A. Times Sept. 21, 1953 Coyotes Dig Clams and Fish Squeal in Santa Maria Bay- By Charles Crawford. Sea food eating coyotes which catch fish and dig clams and fish that grunt and squeal like pigs were among nature's oddities found in Santa Maria Bay by marine biologists of the Calif. Dept. of Fish and Game on a recent cruise of the department research vessel MV Yellowfin. Santa Maria Bay, 560 miles down the coast of Baja California from Los Angeles Harbor, is a crescent shaped body of water stretching seven and one-half miles

across its entrance from Hughes Point on the north to Cape Corso on the south. The bay itself is separated from Magdalena Bay to the south by a narrow sand spit. High hills, barren and rocky, rear skyward at each side of the entrance tapering down into the sand dunes and the mangrove swamps and amshy lagoons which lie to the east of the harbor. Coyotes, which make their homes in the tangled mangrove swamps behind the sand dunes, were elusive and observed only through field glasses as they patrolled the sandy beach like jackals, occasionally stopping to dig a clam or waiting for unsuspecting fish to be trapped in shallow pools by retreating tides.

Squealing and grunting fish classified by marine biologists as "puffer fish" were captured in the shallow waters of the entrance to the mangrove bordered lagoons.

L.A. Times Sunday May 3, 1953- Miocene Whales Bones Unearthed- County Museum Scientists Dig Up Mammal 12,000,000 years old.

A scientific team from the County Museum wielded pickaxes and scraping knives yesterday as they unearthed the fossilized remains of a 12,000,000 year old whale in Hidden Hills near Calabasas. Dr. Theodore Downs, curator of vertebrate paleontology at the museum, estimated the aquatic mammals length at more than 30 feet and said the skull would measure about 8 feet. - ribs four feet long.... (long article illustrated by a photo, of the crew working etc.)

NEW PUBLICATIONS RECEIVED

Proceedings of the Malacological Society of London- the following papers in this issue-

English Eocene and Oligocene Veneridae Part II . By W.E. Tremlett

The Nature of Shell Encrustations in Some Aquatic Molluscs

By T. Warwick *** This paper will attract your interest. The

author has made an interesting study including chemical analysis of the encrustations and some speculation re their causes and variations. We may hope that he will continue his research in this field to other groups.

New Name for a Pakistan Eocene Lamellibranch By F.E. Eames

Vermicularia and the Turritellids By J.E. Morton- *** At least

this editor found this paper of very unusual interest. It really takes an unusual paper to stop the writer for a good half hour while studying the work. But perhaps here it will not be necessary to attempt a proper review which would indeed be a bit extensive, but suffice to say that any of us who have had the doubtful privilege as I can recall with some embarrassment of having a series of juvenile vermetids sent in for classification and spending a great deal of time in an attempt to place them in Turritella.

"Circulares" Del Museo y Bibliotheca De Malacologia De La Habana - M.L. Jaume Calle 13 No. 351, Vedado, Habana, Cuba Precio \$1550 por 100 hojas. I always look forward with interest to receiving the "Circulares". To be true they are in Spanish with an occasional exception and the fact that I find them of such interest may well be due to the fact that I was raised on the Mexican border and Spanish is at least familiar and understandable. Papers in this issue- Valor De Las Conchas En Las Primeras Civilizaciones Por Dr. P.H. Fischer- Traducción del frances Por Dr. J.R. Castellanos (con.)

Los Moluscos De Cuba En La Historia Fisica, Politica y Natural De La Isla De Cuba (Reproduccion de M.L. Jaume)

The republication of such difficult papers is of great value.

MINUTES 132

OCT 1953

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax 3-5710
Home Ax 2-7965

Fred Randolph Aldrich

We have lost another of our senior conchologists. Mr. Aldrich passed away Sept. 28 at the age of 87, although his host of friends who knew him and visited his Aldrich Museum of Newport Harbor, certainly never thought of him as an elderly man. No boy could have been more interested and enthusiastic about his avocation than was Mr. Aldrich. The Aldrich museum is a beautiful place, one of the show spots of California for those interested in nature. We have not been advised about the future of the museum and the fine collection it contains. It is to be hoped that it will be permitted to continue. Since the Aldrich Museum actually faced Newport Bay the collection of specimen mollusks from that section is probably unequalled anywhere. Mr. Aldrich lived there for 33 years and those of us who knew him will assure you that nothing of unusual interest in conchology during those years ever escaped his attention. He was by profession a civil engineer, also owned and operated an orange grove. He leaves a daughter, Mrs. Chester Schuepbach of La Habra, and son Harry of Costa Mesa.

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research.

2. The second part of the report is a detailed description of the methodology used in the study. It includes information about the sample, the data collection methods, and the statistical analysis.

3. The third part of the report is a discussion of the results of the study. It presents the findings of the research and discusses their implications. It also includes a comparison of the results with previous studies.

4. The fourth part of the report is a conclusion and a list of references. The conclusion summarizes the main findings of the study and provides recommendations for future research. The references list the sources of information used in the study.

THE TRAVELS OF THE CHACES.

by

Mr. & Mrs. E. P. Chace.

We left Lomita on the morning of July 15th, headed for Neah Bay, Wash. The first two days no collecting. We made several stops on the 17th and 18th looking for land snails and have only a dozen or so shells to show for it, but a few of them are the little known *Helminthoglypta anachoreta*, Binney.

The 19th, 20th, 21st, and 22nd we drove up the Oregon and Washington coast. At one stop, near Forks, Wash., we found the seldom collected slug, *Hemphillia glandulosa*, Bland & Binney, and mailed them to Dr. Gregg. We sent at least 12 and they proved to be cannibalistic, as only 3 were in the package when Dr. Gregg opened it.

The evening of the 22nd we camped at Clallam Bay and the next 4 days were busy ones. Up at daylight and out on the rocks and cleaning up the catch in the afternoons. One of the highlights of that 4 days was the finding of 4 live *Trichotropis cancellata*, Hds. On the 25th we moved out to Neah Bay where we camped another 4 nights. The first morning there we went to Waadah Island and found collecting very good, with fine sets of *Crepidula nummarius*, Gld., *Thais lamellosa*, and *Murex foliata*. *Acmaeas* too were plentiful and beautiful. Some resembled the Atlantic *testudinalis*. On the outside of the Island and off the breakwater which leads out to it, there were particularly fine, and on some of them the edge of the shell showed a bit of yellow color. When this lot of shells was cleaned many of them showed varying amounts of yellow in the interiors. Lacunas were numerous and we hope that we brought back enough topotypes to give Dr. Berry a chance to pin down some of Carpenter's names. One morning we drove 8 miles to the ocean beaches south of the Waatch River where we found a large mass of ledge rock with sand beaches on either side of it. Collecting here was not as good as back along the Straits.

Plenty of Chitons at all the Clallam Bay and Neah Bay localities and we collected all that we could care for. Another thrill was the finding of *Lamellarias* and *Volutinas*. There were found on chunks of a compound Ascidian on which they apparently feed. Some were in pits below the surface of the Ascidian and Mrs. Chase found it a messy job getting them out. However, there was no irritation of the skin, such as happens when the fingers are used to comb the sheets of small *Anemones* in hunting for *Epitoniums*. No specific names on either the *Lamellarias* or *Volutinas* as yet. The animals of the *Lamellarias* were usually dull colored and the shell entirely covered.

Our next move was to Elwha Camp in the Olympic National Park where we rested 3 days before going on to the Hood Canal and Puget Sound regions. At Seal Rock on the Hood Canal we collected a generous mess of the Japanese oysters (*O. laperousii*, I believe), and the oyster stew was fine eating. The young shells of this oyster are very frilly, but the frills are all broken off before the oyster reaches maturity. Here we also collected *Tapes semi-decussata* Rve., *Protothaca staminea*. Plenty of *Saxidomus* shells were seen on the beach. Many *Littorina scutulata*, but they were all very small.

A reef near Orchard Point, not far from Bremerton, yielded *Thais lamellosa* and a lot of *Acmaea cassis*, Esch. (*A. pelta* Esch.) These last were all rather tall, smooth and mostly white with dark stripes. Quite a distinct race. Rocky Point near Bremerton was next. Mr. Spicer guided us to the spot where

he and Mr. Reed collected Pholads about 20 years ago. We dug several Pholas ovoidea out of a ledge of quite hard rock. In spite of the fact that they were very large and apparently very old, the anterior end of the shell was not closed. The shells were 15 to 18 inches below the surface and it took a lot of careful digging to get them out without breaking them. A few miles away on the shore of Dye Inlet we dug the somewhat similar Zirfaea pilsbryi, Lowe. These were in firm ground with soft sandstone bottom about a foot down and the Zirfaea had not penetrated the sandstone to any extent.

A low tide on the famous razor clam beaches of Washington really did more for the larder than for the shell collection, and nearly wound up the marine collecting for the trip.

During our visit with the Spicers, Phil introduced us to some of the fanciest land shell collecting yet. The private woodlot of a very gracious lady from Maine yielded *M. fidelis*, *H. vancouverensis*, *Vespericula* cf. *columbiana*, *Allogramma townsendiana* and *Anguispira kochi occidentalis*. These last were very large and handsome specimens and from the only colony reported from west of the Cascades.

We stopped at various streams and rivers in Washington, Oregon and Northern California and took *Goniobasis*, *Lanx*, *Sphaerium*, *Margaritana* and *Goniidea* in varying quantities; *Anodonta*, *Fluminicola*s and *Physas* only a few and in one spot a few *Parapholys*.

Coming south we left Highway 99 near Hornbrook and followed the crooked road down the Klamath River to Weitchpec, then up the Trinity River to Willow Creek where we had a very pleasant evening with "Bob" Talmadge. He has several gallon jars in which he keeps live snails from various localities in his area. With more time he will probably come up with answers to several questions. He is certainly keeping careful locality data and the opportunity to compare living specimens should be helpful.

We had hoped to find a few *Monadenias* as we came down along the Klamath River, but the country was too dry, collecting spots were scarce and snails were even scarcer, so we gave up the idea of more land shell collecting and when we left Willow Creek, went over the hills to Arcata and Highway 101. We tried to find *Algamorda newcombiana* at Mad River Slough, near Arcata, but had very poor luck. That was the last of the collecting. A stop at the California Academy of Sciences at Golden Gate Park and visits with various friends in the Bay area completed a very enjoyable trip.

We had the pleasure of a very brief visit with Dr. and Mrs. Fritz Haas of the Chicago Museum of Natural History. They have been touring the entire Pacific Coast. I can always think of at least a hundred things I would have liked to have talked over when our honored guest has gone. We are sorry that he could not have been with us longer.

And while thinking of Chicago we had a visit last week by Dr. Cahn-Bronner of Chicago.

Our fellow member and enthusiastic *Cypraea* expert, Ray Summers was with us for a day also. We are always happy to see Ray. He always brings news of shells and shell collectors.

And we recently had a visit by Dr. Spencer Tinker of Honolulu. Dr. Tinker's book is in most of our libraries, and we enjoyed our visit with him.

PERSONAL COMMUNICATION FROM ROBERT TALMADGE,
WILLOW CREEK, CALIFORNIA

Dear Friend:

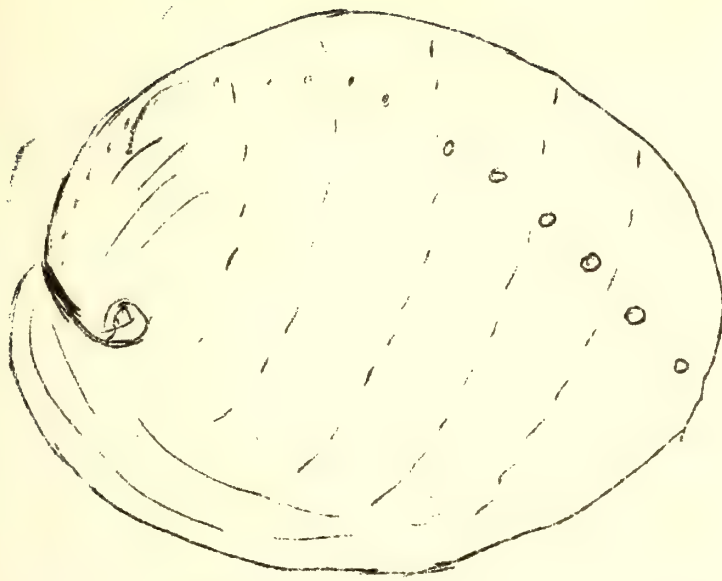
Ran into something in the line of Haliotidae that is new to me, the other day. It may be a more or less common thing, so I am sending you the dope as you have probably handled as many specimens as any other person. The story goes back two years ago, while we were on vacation down in Southern California. I picked up a small dead Haliotis cracherodii at Corona del Mar, from among some small living ones and a stack of dead shells. This shell was taken due to the more circular shape and the lip protruding forward of the spire and around the front of the shell. I thought that this was a mere mutation and took it as such.

The other day, an old friend of mine, now in the Navy, returned on furlough. To aid in his expenses he had brought a couple of sacks of the Black Abalone home to sell to some local novelty shops. Knowing that I was interested in the genus, he poured the contents out and told me to take a series for my collection. Imagine my surprise to see several of these flat ones in the lot. I took a growth series from juveniles to senile specimens, ranging in major diameter from 35 mm. to 145 mm. In all cases they were very flat, much more so than the typical Blacks, and much wider and circular. In all cases the lip was extended outward in a gentle slope, and in the prime and juveniles the lip was carried forward and around the spire. In the seniles this protrudance was not so noticeable, but the flatness was still there. As there was no sign of erosion on the dorsal surfaces it does not appear that these shells grew in a crack.

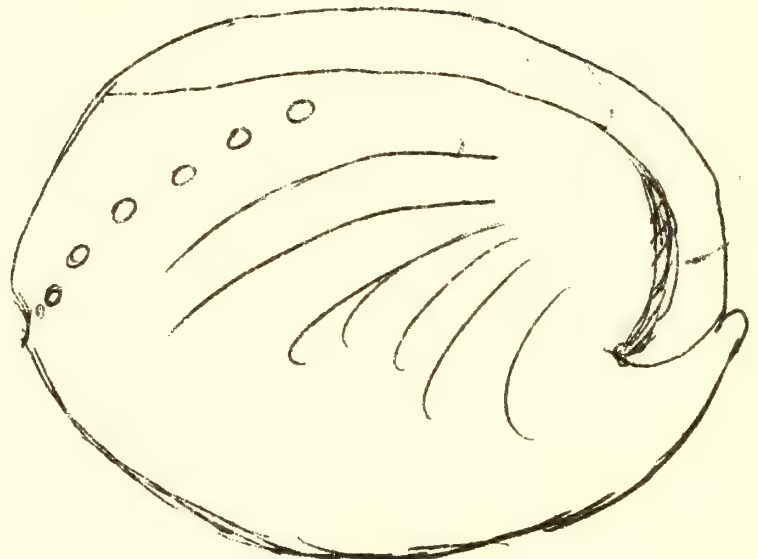
I asked the fellow the location, and found that he had picked them up at a place where the Mexicans had taken them just north of Ensenada, Baja California, and that he knew nothing of the animal, if a difference was in existence. I don't know if these flat ones had turned up in any quantity before, or whether the difference is great enough to indicate a subspecies. If only one shell had been found as at Corona del Mar, I would have passed it off as a mutant, but there were too many of these flat shells in the lot, and they could be separated immediately without any trouble. I am enclosing a tracing of one of the smaller ones and a senile one. Maybe you can put some light on the subject of these flat forms. They are H. cracherodii, but exhibit enough physical difference to be separated by sight alone. They are as different from the regular cracherodii as H. californiensis is.

Incidentally there is a faint sculpture on the dorsal surface of these flat abalones, which shows up very well on the spire. Any dope on them would be appreciated.

Emery and Mrs. Chace dropped by on their return trip, and we had a delightful evening. I had several species and subspecies of Monadenia here alive, and tried to get them out to do their stuff. They failed to cooperate in the evening, but by morning they were crawling around the jars, so we had a chance to compare the various animals side by side. Conditions are very dry and the snails are all dug in deep, so it is almost impossible at this time to locate anything new.



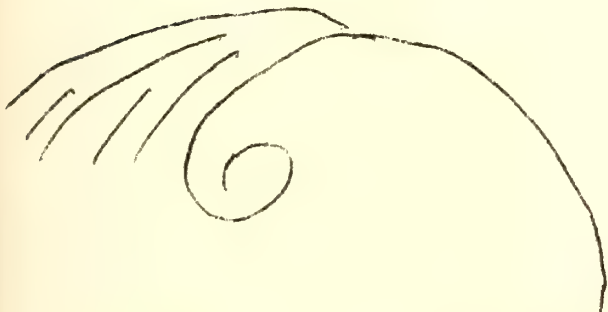
DORSAL



VENTRAL



SCULPTURE



SENILE SPECIMEN
JUNCTION OF LIP AND WHORL

HALIOTIS CRACHERODII LEACH,
VIC. ENSENADA, BAJA CALIF., MEXICO

MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA
October 1st, 1953.

The President, Mrs. Harry Turver, called the meeting to order at 7:40 o'clock in the Los Angeles County Museum, and welcomed twenty members. After the Minutes of the September 1st meeting were read and approved, the Secretary presented a bill of \$8.49 for Stationery: 1000 letter heads with shell emblem. Members may have these at \$1.00 per 100 sheets.

Announcement was made of the Long Beach Shell Club, October 11, meeting.

A letter from thirteen year old Linda Smith, 4 Corte Dorado, Millbrae, Calif., was presented. She would like to exchange shells with someone her age.

A notice from the September 28th Los Angeles Times was read of the Funeral Services of Mr. Fred Randolph Aldrich, 87, owner of the Aldrich Museum at Newport Harbor, and an Orange County resident the past 55 years. Our sympathy is extended to the family.

Mr. John E. Fitch presented the Club members with specimens of Haliotis californiensis, Swainson, 1828., from Guadalupe island, south end, collected by Ed. V. Dwyer, September 8, 1953, in 0 to 10 feet of water. There were enough for several for each member. Also two groups of Corbitula flumalis, one a month older, showing a month's difference in growth. Mr. Fitch displayed specimens of oysters from Morro Bay - one from a bottom without further attention, and another that had been raised on a redwood stick, bringing it above the mud bottom. The real problem was that a heavy growth of algae covered this bottom and when it died it killed most of the life beneath it. The oyster on the stick above it was several times the size of the other one, and were bright, well-formed specimens. It was indeed an interesting exhibit. Mr. Fitch also showed a specimen of an oyster group from the same seed planted in Salton Sea. The fact that this clump of oysters, though completely covered with oysters, showed size and health, is a tribute to the work of the California Fish and Game under direction of Mr. Fitch. These oysters are not the large Ostrea gigas but another species of Japanese oyster that they expect to develop into a cocktail oyster. The native Olympia oyster, Ostrea lurida, does not develop commercially in southern waters. An interesting feature of this experiment is that all of these oysters were from seed of the same age, imported from Japan.

The President thanked Mr. Burford for the exhibit of a magnificent growth series of Haliotis asinilis, and a ten minute recess was held to view the exhibits.

Mr. and Mrs. Chace reported on their recent collecting trip north, which will be found elsewhere in these Minutes.

The following members were named by the President as a Nomination Committee: Dr. Howard R. Hill, Mr. John C. Burch, and Mr. Emery P. Chace.

In the absence of Miss Ruth Coats, program chairman, the Secretary introduced the speaker of the evening, Mr. George Zenick, Bookbinder. He is a native of Czechoslovakia, with ten years of European training and forty-five years as a designer and production manager with some of our leading publishers. He is an active member of the Guild of Book Workers, the American Institute of Graphic Arts, and the Los Angeles Club of Printing House Craftsmen. For the past 4 years he has been operating his own studio specializing in fine hand-bookbinding. Mr. Zenick spoke on fine books and their care, and fine examples of his work were on display. Because of the interest shown, excerpts of his address will be found elsewhere in these Minutes.

-- Mrs. John C. Burch, Secretary

DETERIORATION OF BINDINGS AND THE CARE OF BOOKS
by MR. George Zenick

The deterioration of bindings is due to a variety of causes, chief among which are poor materials, faulty workmanship, bad storage conditions, and improper handling.

Most expert binders use the best materials procurable, but even these are not without faults. When these materials are used on a faultily constructed book, there is an unnecessary strain put upon them, and a premature wearing-out takes place. This is also the case when the materials themselves are used in a manner not consistent with strength. The most flagrant example of this is found in leather covers which have been unduly pared and thinned so that the very life of the leather is vitiated. The strength of leather resides for the most part in its fibers, and these cannot be cut into without injury to the material. At present we are tending toward such "finish" in hand-bookbinding that strength and lasting qualities are being sacrificed. It is unnecessary to thin a leather too drastically if the size of the skin used for covering is suited to the size of the book. Small skins of fine grain are quite thin, and these should be chosen for covering small, slender books, for then practically the whole strength of the skin may be left intact. This practice adds to the expense of a binding, for small skins do not cut to advantage economically, but I think most book lovers would gladly pay for the extra expense involved in order to secure a more lasting binding. Another practice that shortens the life of a leather-covered book is that of wetting and stretching the leather when covering. When leather is pasted it has a tendency to stretch, and if its natural stretching characteristic is increased by profuse wetting when it is being fashioned to the shape of a book, its fibers are pulled out to unnatural length. As a result, a strain is put on them, and the leather has dried, it is far more likely to crack than when put in place without being stretched to its utmost.

One of the commonest faults of construction found in Publishers' medium-priced books, is the use of a false, weak, hollow back. The same weakness is inherent in false headbands, which, like hollow backs, are merely pasted or glued on. The only type of headband that will withstand the wear and tear of usage is one sewed through the sections of the book and thus made an integral part of it.

The matter of storing books has been the subject of scientific study, and although experts differ as to conditions most favorable for preserving the life of the bindings, they are unanimous in their opinion about the action of some deteriorating agents. It is agreed that ventilation and freedom from dampness are necessary to prevent premature decay of leather. We know that dampness produces mould, or mildew, and that excessive dryness produces cracking and rotting of leather. The partial answer to this has been air-conditioning. Light has been found to be a deteriorating agent, as well as dust, gas fumes, and smoke. Tobacco smoke is extremely deleterious, and gas fumes not only conduce deterioration of leather, but also have a dulling effect on gold tooling. To exclude the direct rays of light in glassed-in book-cases, pale-yellow or yellowish-green colored glass has been found most effective.

Books should be placed on shelves sufficiently tight together to keep them from yawning in order that the boards will not warp. A metal prop can be used to hold the last book upright when a shelf is not filled. However if books are too tightly packed, no circulation of air is permissible, and mildew is liable to result. If mildew has attacked a binding, it can often be removed by wiping it with diluted alcohol or vinegar, but its occurrence could be prevented by keeping the books in a dry atmosphere and removing them from the shelves periodically to rub their sides with a dry, soft cloth. Glass cases keep out dust and fumes to a great extent, but if leather bindings are left in closed-in cases and not handled frequently, they are

subject to attack by mould. Whether kept behind glass or on open shelves, books should be frequently handled, cleaned, and oiled if the life of their bindings is to be prolonged. A dressing should be composed of an oil, to serve as food, and a penetrating fluid. A simple formula developed by the New York Public Library suitable for this purpose, is composed of four parts of lanolin (procurable at any pharmacy) to six parts of neat's-foot oil. Warm the lanolin until it runs freely, and then thoroughly mix the neat's-foot oil with it. First wipe the book to be treated with a dry cloth to free it of dust, then apply the dressing mixture, after cooling, with a piece of cotton wrapped in clean white cotton cloth. Allow the book to stand for a few hours until the oil in the dressing has been absorbed. When dry, the sides of the book are rubbed with a soft cloth and may be finished off with a clean sheep's-wool shoe polisher if a high polish is desired. Unless some artificial means are employed, the leather soon becomes dried out, and disintegration sets in.

A word about bookworms. Something can be done about their ravages by putting camphor or alum in bookshelves as a repellent. But glue and paste seem to attract them. If put in a closed box with ether in it, a book infested with them, will be rid of the live worms, but this will not destroy the eggs. Turpentine, camphor, and tobacco infusions seem also to help, but only by persistent effort can bookworms be exterminated. A weak solution of formaldehyde can be sprayed on the books with good results, but care must be taken, and no discoloring insecticide should be used on books. Usually only old books are attacked, and these should be isolated.

Many helpful suggestions for the preservation of bindings will be found in the United States Leaflet No. 69, and in *The Care and Repair of Books*, by Harry Miller Lydenburg and John Archer, 2nd Ed.

In the foregoing remarks I have had especially in mind real bindings, but publishers' casings likewise suffer from being exposed to dampness, excessive heat, and fumes of gas and smoke. Faulty planning and inferior workmanship are contributing factors in shortening the life of a casing as well as a binding, and because of their temporary character, less care is taken in their handling and housing than they merit.

The carelessness with which books are pulled off a shelf by tugging at their headcaps, the manner in which they are thrown with open pages face down on a table, and the habit of stuffing their pages with extraneous matter inserted for bookmarks, all militate against the life of a casing or binding, however well constructed. A newly cased or bound book should be opened with care, lest its back be broken. To open a newly bound book, it should be laid on a table, and a few leaves at the front and at the back should be pressed open on the book boards. Then several more leaves at either end of the book treated likewise until the center is reached, using care to take approximately the same number of leaves at the front and back. After this treatment, the book will probably have a tendency to yawn, but this can be overcome by putting it under a few heavy volumes and leaving it under pressure for a short time.

Books serve us as silent friends and they should be treated by their owners with equal consideration.

NEW VOLUTES FROM THE WEST INDIES

A. Hyatt Verrill



VOLUTA ORNATA, Verrill

Form more slender than any of the varieties of Voluta musica or V. ebraea. Spire elevated, with three whorls. Nucleus much larger and more swollen than in V. musica. Color reddish-brown, lighter at tip. Shoulder nodules almost obsolete on the body whorl, more pronounced on spire whorls. Columella with nine large, conspicuous plaits. Aperture elongated, narrow. Edge of lip with 8-10 large dark-brown spots. Terminus of canal only slightly upturned. No spiral grooves or plaits on posterior portion of shell. Ground color of shell very pale pink, variously marked with spots and fine specks of ferruginous and brown. Four or five very narrow spiral lines of reddish-brown just below shoulders and another similar band midway between these and the posterior end. Each of these bands with six to seven large, more or less ovoid, blotches of bluish-gray. Interior of aperture very pale pink. Columella pale bluish-gray.

VOLUTA ORNATA, Verrill

Length 105-115mm. Diameter at shoulders 30-36mm. Three specimens, two from Margarita, one from Curacao. 70-80 fathoms. This is a very distinctive shell differing greatly from any form of Voluta musica or Voluta ebraea.

VOLUTA MUSICA ALBA, Verrill

I have occasionally had specimens of a white Voluta musica that I consider albinos. However, as Mr. Willard Mohorter collected several of these shells at Grenada Island, it would appear that they are a white albinistic form of V. musica, analogous to the white Cancellaria reticulata and white Busycon perversum of the Florida Gulf Coast, and the white Strombus pugilis that is the predominating form in some of the Virgin Islands. The shell is identical in form with V. musica carneolata but is pure white with very faint "staff" markings of pale purplish and dots of lavender or purplish-gray.

A NEW WEST INDIAN MUREX

A. Hyatt Verrill

Among a number of shells recently collected in the Lesser Antilles there are two specimens of an undescribed Murex that are totally unlike any species hitherto recorded from the West Indian area and that I have named in honor of Mrs. Helen Carr of Lake Worth, Florida.

MUREX HELENAE, Verrill

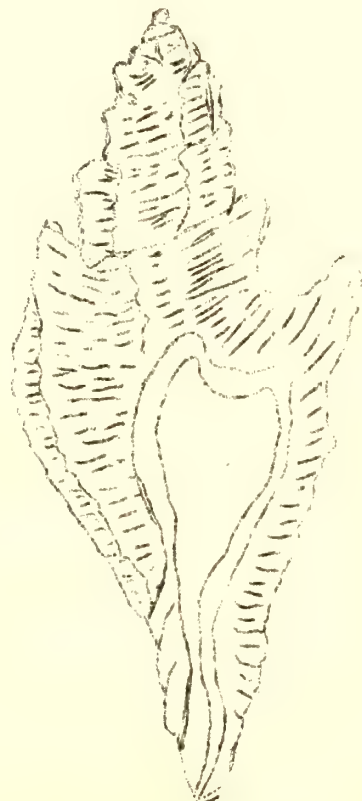
Shell elongated, length about twice the greatest diameter. Spire with five to six whorls, each whorl of almost equal diameter from shoulder to shoulder, with upper portion slightly larger than the lower. Shoulders pronounced. Each whorl, including the body whorl, with three strong, highly elevated, rather thin varices with crenulated edges and with their upper extremities extended to form obtuse wing-like points to beyond the base on the next whorl above. Aperture rather small, the upper portion convex and with the lip forming a double curve with siphonic canal bent sharply to the left near its extremity. Four strongly marked foliations on left side of canal. Columnar callus and inner surface of lip highly polished. Horizontal sculpture consists of fine but distinct grooves which terminate at the edges of varices to produce the crenulated effect.

A low raised vertical rib between the varices. Color of shells pale ochreous or ochreous orange. Operculum missing.

Size of type: Length 50mm. Diameter 26mm.

Size of paratype: Length 31mm. Diameter 16mm.

Locality: Off the island of Montserrat. Trapped in 50-75 fathoms on rocky bottom.

MUREX HELENAE, Verrill

NEW PUBLICATIONS

Notices of New West American Marine Mollusca by S. Stillman Berry, Transactions of the San Diego Society of Natural History, vol. XI, No. 16, pp 405-428, Plates 28-29, Figs. 1-10.

This is an extremely important paper and adds a number of new species to the fauna of this coast. We do not know the price of it but all students of conchology for the west coast will certainly wish to add it to their libraries. However, the cost would certainly be nominal and I will be pleased to see that any get it who ask me for a copy, or write to the San Diego Society of Natural History, Balboa Park, San Diego.

VolSELLA sacculifer n. sp. Type locality, San Pedro Harbor. If you have a set labelled V. fornicata from San Pedro, you probably have this species.

DiploDONTA impolita n. sp. Type locality 15 fathoms off Forester Island, Alaska, dredged by George Willett. This species is stated to be less globose than the southern D. orbella. It is probable that if you have specimens labelled D. orbella from Alaska they are of this species.

*** Note*** It is to be regretted that Dr. Berry failed to mention the generic name Taras Risso 1826 generally used now in lieu of DiploDONTA Brown 1831. There must be some logical reason for ignoring Taras, and we would like to know what it may be.

Lacuna succinea n. sp. Type locality, San Pedro, Calif. It is almost certain that all local collectors will have this shell labelled either auriantiacia Carpenter, solidula Loven, or carinata Gould. The matter is carefully discussed in this paper.

Turritella orthosymmetra n. sp. Type locality; Off Pebbly Beach, Santa Catalina Island, California; dredged in 50 fathoms by J.H. Paine and S.S. Berry, 31 Aug.-1 Sept., 1903.

Some of my friends no doubt have this shell from me and dredged off Redondo Beach, Calif. interestingly enough in 50 fathoms. If I sent it to you I probably labelled it T. jewettii Carpenter with a ?.

Ocenebra crispatissima n. sp. Type locality, 33 fathoms off Isthmus Cove, Santa Catalina Island. This is another of the O. barbarensis, squamulifera etc. group. It would be a good idea if Dr. Berry would publish an entire paper on these things. The last time I had mine out on the table I ended with not less than 30 variations. They are a very abundant dredged shell and very confusing. I finally decided that we either already have too many names or not half enough.

Nassarius (Schizopyga) rhinetes n. sp. Type locality: Dredged in 40 fathoms, off Moss Landing, Monterey Bay, Calif.

If you have Nassarius californiana Conrad on any of your Recent specimens this is it. We have long known that Conrad's name was not applicable, and we are pleased to have a proper name for the shell. It is not common at all in littoral collecting but is very abundant in moderate dredgings.

Agaronia murrha n. sp. Type-locality: Corinto, Nicauragua (Herbert N. Lowe, 1931). I have a large set of these from Acapulco, Mexico and have refrained from attempting to name them as they are so obviously different from the more common A. testacea.

Antiplanes (Rectiplanes) willetti n. sp. Type locality: 50 fathoms off Forrester Island, SW Alaska; dredged by George Willett, July, 1917.

Knefastia princeps n. sp. Type locality: 20 fathoms; pebble, mud and shell bottom; 2 miles N. of Cedros Village, Cedros Id., Baja Calif.

2. The second part of the document focuses on the implementation of these practices across different departments. It provides a detailed overview of the roles and responsibilities of each team, as well as the specific steps required to ensure compliance with the established protocols. This section also addresses the challenges faced during the implementation process and offers strategies to overcome them.

3. The third part of the document discusses the ongoing monitoring and evaluation of the system. It highlights the need for regular audits and reviews to ensure that the system remains effective and efficient. This section also outlines the process for identifying and addressing any issues that may arise, ensuring that the system is continuously improved.

4. The fourth part of the document provides a summary of the key findings and conclusions. It reiterates the importance of maintaining accurate records and the need for ongoing monitoring and evaluation. This section also offers recommendations for future research and development, ensuring that the system remains relevant and effective in the long term.

5. The final part of the document is a conclusion that summarizes the overall findings and conclusions. It reiterates the importance of maintaining accurate records and the need for ongoing monitoring and evaluation. This section also offers recommendations for future research and development, ensuring that the system remains relevant and effective in the long term.

Woodbridgea new genus

Woodbridgea williamsi n. sp. Type locality: 25 fathoms .. Cedros Id., Baja Calif. I would like to see one of these. From the figure and description I obviously have not seen it. An interesting shell related no doubt to Haminoea but the author states that there is nothing near it for comparison.

Micraenigma new genus

Micraenigma oxystoma n. sp. Type locality: 25 fathoms off Cedros Island.

** Ensis californicus Dall and Ensis myrae n. sp. are figured in this paper on Pl. 29, but are not mentioned. They were described in another paper which we reviewed in the last issue of the Minutes.

A New Fossil Shell from the Palos Verdes Sand by George Kanakoff. Diodora constantiae n. sp. The species is beautifully illustrated and compared with other species in particular with the young of D. inaequalis.

Two New Land Shells from Arizona By Wendell O. Gregg. Oreohelix anchana n. sp. and Ashmunella lenticula . Both species are carefully described and well figured.

Both of the above papers are in Bulletin of the Southern California Academy of Sciences Vol. 52, Part 2, May-Aug.,1953.

The Molluscan Community of the Oyster-Reef Biotype on the Central Texas Coast by Elton L. Puffer and William K. Emerson. Journ. of Paleontology, Vol. 27, no.4, July,1953

Tulane Studies in Zoology- This excellent new publication has made a surprising start having published 6 issues beginning with Vol. 1, No.1, June 1,1953 to Vol. I No.6, Sept. 15,1953.

Annual Report of the Chicago Natural History Museum. This is a beautiful book of 138 pages with many illustrations of the multitudinous work of this great institution.

National Park and Reserves- An account of the National Park and Reserves situated near Adelaide, South Australia. This is a very attractive book of 197 pages. Among other articles is one on Shells of the National Park and Reserves by Bernard C. Cotton, with two excellent plates illustrating 55 species.

South Australian Shells By Bernard C. Cotton- Published by the South Australian Museum. An attractive booklet with 12 very fine plates illustrating 226 marine shells and 25 snails and slugs. April,1953

These Snails may invade Your Garden By B.C. Cotton. This is an interesting array of exotic garden pests. Several of them are familiar to us here in southern California, but numbers of others are strangers. All are well figured including the slugs. Such a paper describing possible garden pests should be of genuine value to any one interested in possible importations etc.

The purpose of this study is to investigate the effects of various factors on the performance of the system. The study is divided into two main parts: a theoretical analysis and an experimental investigation. The theoretical analysis is based on the principles of thermodynamics and fluid mechanics, while the experimental investigation is based on the results of a series of experiments conducted under controlled conditions.

A new method has been developed for the determination of the rate of reaction between the two reactants. This method is based on the measurement of the change in the concentration of the reactants over a period of time. The results of the experiments show that the rate of reaction is directly proportional to the concentration of the reactants, and that the rate of reaction is also affected by the temperature of the system.

The following table shows the results of the experiments conducted at different temperatures. The rate of reaction is measured in terms of the change in the concentration of the reactants per unit time. The results show that the rate of reaction increases with increasing temperature, and that the rate of reaction is also affected by the concentration of the reactants.

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MINUTES 133

NOV. 1953

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax 3-5710
Home Ax 2-7965

NOMENCLATURAL CHANGES

Inasmuch as we accepted in our Distributional List completed some years ago a number of generic names which should be changed, it seems advisable to call the attention of our members to the following notes. These are taken from the new 1953 revised "Illustrated Key to West North American Pelecypod Genera" by A. Myra Keen and Don L. Frizzell page 31 with some reference to the new Supplement I: Systematic Index of Genera pp 29-30. (The revised Key sells for \$1.50).

Aloidis Muhlfield, 1811, falls as a synonym of Corbula Bruguiere, 1797, by action of the International Commission of Zoological Nomenclature, Vol. IV, p. 255, 1950)

Axinopsis Sars, 1787, is a homonym. It was renamed Axinopsida by Keen and Chavan in Chavan, 1951 (C. r. Sommaire de la Societe Geo-

WINTER 1952

WINTER 1952

CONSTITUTION

CLUB OF AMERICA

1952-1953

Section 1. Name and Purpose

The Club of America is a non-profit organization established for the purpose of promoting the welfare of the American people and the advancement of the arts, sciences, and literature.

Section 2. Membership

Any person who is a resident of the United States and who is interested in the promotion of the welfare of the American people may become a member of the Club of America.

Section 3. Officers and Directors

The Club of America shall have a Board of Directors consisting of not more than twenty-five members, who shall be elected by the members of the Club. The Board of Directors shall have the authority to manage the affairs of the Club and to make all decisions concerning the Club's operations.

Section 4. Financial Management
The Club of America shall maintain accurate records of its financial affairs and shall submit an annual report to the members of the Club. The Board of Directors shall be responsible for the proper management of the Club's funds and for the payment of its debts.

-logique de France, No. 12, p. 210, 1951).

Rochefortia Velain, 1878, (not 1876, as often erroneously cited) is a synonym of Mysella Angas, 1877.

Saxicava Bellevue, 1802, must be replaced by the prior Hiatella Bosc., 1801 (see Dodge, Nautilus, Vol. LXIII, pp 138-139; Vol. LXIV, pp. 29-33, 1950)

Taras Risso, 1826, is apparently a nomen dubium, based on an indeterminate type species. The first available name to replace it is Diplodonta Bronn, 1931 (Chavan, 1952, Journal of the Washington Academy of Sciences, Vol. XLII, p. 121)

Two pelecypod genera have been added to the West North American fauna since the publication of the first edition of the key. These are well figured and discussed- Adontorhina and Montacuta.

SNAIL EXPERT TO CHECK ON SCOURGE IN CEYLON

(From the Los Angeles Times, Nov. 1, 1953)

Dr. Albert R. Mead taking year's leave to learn why giant species is dying off.

Tucson, Oct. 31- Giant African snails are dying off in Ceylon and Dr. Albert R. Mead is going there to learn why. If it is some disease or insect that is killing them, he hopes to introduce it to other parts of the world where Achatina fulica is a pest.

The National Science Foundation of Washington, D.C., has made an \$8300 grant to finance Dr. Mead's new study and he has been given a year's leave of absence, beginning Jan. 1 from his post as professor of zoology at the University of Arizona.

Accompanied by his family, Dr. Mead will first visit foundation headquarters and Harvard University to brush up on the latest snail discoveries of other researchers. He will then take ship to Ceylon and in the latter part of 1954 will return by way of Singapore, Java, Australia, Manila, Guam and Hawaii.

It is largely because of Dr. Mead's Pacific Island investigations after World War II that the present Federal law barring the giant snail from the United States and its possessions was adopted. In spite of all precautions it has gained a foothold in Hawaii and in one or two of the Southern States.

The snail originated in Africa and its spread over the Pacific is attributed to the once conquering Japanese, who regarded it as a food delicacy. But it will eat anything in the way of vegetation and can be unbelievably destructive where numerous. It breeds so rapidly that in five years one individual can theoretically become the ancestor of 11,000,000 snails. A full grown specimen is nine inches long and weighs a pound.

Only point at which Dr. Mead agrees with the Japanese is that the snail is highly nutritious, being rich in protein. He and Dr. Kemmerer of the university's nutrition department have been working on a poultry feed with snails as a main ingredient, as a possible step toward making snail harvesting or gathering, a financially feasible proposition.

First good snail news that Dr. Mead ever heard is that the once abundant snails in Ceylon have become so scarce they are hard to find.

Note from Dr. W.J. Clench, Museum of Comparative Zoology, Harvard "Upon reading the account by E.P. Chace on "Thomas Martyn", Minutes, no. 131, Sept. 1953, pp. 6-8) I am prompted to make the following report:

A short time ago I came into possession of a two-volume set of 80 plates, complete with frontispiece, title page, table of contents.

introduction and preface. Both volumes are dated 1789, bound in half-calf, probably contemporary binding. The tooling is excellent but not all elaborate.

To settle an estate, a small library on mollusks was offered for sale. The original owner possesses a small "china cabinet" of shells, all specimens perfect, the selection obviously obtained by purchase. The library of no more than 15 books was equally selected, perhaps for the perfection of the bindings rather than for any really practical use. -- W.J. Clench.

THE AMERICAN MALACOLOGICAL UNION

The twentieth annual meeting of the American Malacological Union will be held at the University of New Hampshire, Durham, N.H., August 16, 17, 18, 19, 1954. Sure to be a popular feature will be daily collecting trips, since early morning tides are to be unusually low at that time. Detailed information will be sent to all members when all plans are completed.

The place of meeting etc. for the A.M.U.P.D. has as yet not been decided.

Dr. Henry Van der Schalie is back at the Museum of Zoology, University of Michigan, Ann Arbor after a year in Egypt, but is scheduled to return to Egypt for three or four months next summer.

Dr. and Mrs. Thomas A. Burch and family are returning from several years in Liberia where Dr. Burch has been doing research work on tropical diseases.

Dr. Jeanne S. Schwengel has completed her work revising the fine work "Marine Shells of Western Florida" by Dr. Perry which Dr. Schwengel assisted in compiling in 1938, 1939. Some 22 new shell descriptions and about 60 photos. have been added as well as a great many notes and photos of egg cases. The nomenclature will be brought to date. Dr. Axel Olsson has done the illustrations. No date has been set for the publication of the new book but we will all look forward to it with great interest.

Shell Factory Will Reopen Today in New Site North of Fort Myers-
Fine Branham Collection Added to Free Displays. (These are the headlines of an illustrated article before me)

Rising phoenix-like from the ashes of the Bonita Springs plant, the new Shell Factory stands beside the Tamiami Trail a few miles north of Fort Myers.

The Shell Factory, destroyed in one of Lee County's most disastrous fires on the last day of 1952, reopens today in a spacious modern building. The Grant family operate the Shell Factory.

The beautiful collection of Mrs. Hugh Branham will be on display at the new establishment and all travellers that way should be sure to visit.

Note from Walter J. Eyerdam-

" Yoy stated in the Minutes that you had collected quite a lot of the less common shells in several places along the Oregon coast, especially DePoe Bay. Phil Spicer said he had been there and found few. It looked to me that most of the Bay had been filled in because of much building. I hope to spend a couple of weeks down in S.W. Oregon again in the near future to collect shells and plants."

In thinking about Walter Eyerdam's comments re De Poe Bay, Oregon I am disposed to simply accept it as one of the many things changed by time. I checked to see when I thought De Poe Bay was a wonderful spot and it was in the summer of 1935. One of the weaknesses of old timers is that we tell our friends how things "are" in certain places overlooking the fact that a great many years have rolled by since we were there. I caught myself the other day starting to tell a friend about collecting in southern Nayarit, Mexico since he was going down there, and then realized that my last visit there was about 1921, and I have no idea what it may be like today.

So many of my old favorite collecting spots are gone- or maybe not gone- but cant very well ask the U.S. Navy to move the super secret guided missile plant out of Mugu etc.

More of Walter Eyerdam's letter- re Oregon- " I am keenly interested in collecting Sphaeridae and there are or were a number of small lakes and ponds down there that I would like to explore.

I think I told you before that Prof. Jans Ostergaard and Phil Spicer visited at my homethis summer. Dr. Fritz Haas also visited and saw my shell collection. My wife and I visited him at Senckenberg-isches Museum in Frankfurt in 1930 at which time I became a member of the Archiv fur Molluskenkunde which I still subscribe for. It would have been a great pleasure for me to have met Dr. Haas personally.

And while talking about changes I am greatly impressed by the apparent abundance of the fine big red abalone Haliotis rufescens along the southern California coast. Our member Damon Burford has been bringing in some rather amazing things. For instance a batch of fine legal size H. rufescens from the Palos Verdes section near Pt. Vicente. When asked how deep, he said that at low tide you need not get your feet wet. Anyway I have personally turned over countless rocks, waded, dived, trawled etc. around there and I never took a specimen of H. rufescens. We took plenty of H. fulgens, H. corrugata, and of course, the H. cracherodii were abundant. By diving we did get a very few H. sorenseni. While thinking about Haliotis rufescens though it might be mentioned that a sizable lot came in recently taken by divers off San Nicholas Island. These shells from San Nicholas are remarkable in that not a single one of them seem to have even a sign of a borer. The typical H. rufescens from Moro or Monterey are so full of holes that you have to sort over a ton of them to find a good specimen shell. Just any of these island shells will make a fine specimen shell.

Incidentally, Mr. Burford is getting together an amazing lot of the rare forms and will no doubt have something interesting to report on them.

Just thought about another odd lot that came in recently. None of the specimens that have been named holzneri or imperforata etc. but not one but a basket full of adult H. corrugata with but one hole and oddly enough no particular sign of the others ever having been used. Of course, in my opinion such things are mere pathologic specimens. For instance we had a specimen of Haliotis fulgens with no holes- would have been a fine H. holzneri or something except for the fact that holzneri was a black- a H. cracherodii

Letter from Bob Talmadge, Willow Creek, Calif. " Finally returned to Willow Creek with a wealth of information on both birds and moll-

-usks. The meeting of the AOU was a great success and many informative papers and films were presented. Of course, the bird meeting was the major highlight of the trip, but I also spent enjoyable hours with Allyn Smith at Berkeley where the conversation was of course, Monadenia and also with Dr. Hertlein at the Academy where Haliotidae took up the time. I was especially thankful to be able to examine some of the Recent and fossil types that were there. Dr. Hill at the L.A. Museum was very nice and I had a chance to examine the type of H. c. splendidula Williamson, and can definitely report that it is only a senile shell as Dr. Bartsch indicated in his paper in 1940, and I indicated in my paper on senile Haliotis.

I wish to thank you for the wonderful evening and being shown the various Haliotis. On my return home I got out my series of assimilis and aulea for a double check. After seeing the collections I can note two definite differences. However, Burford's collection shows a great deal of intergrading in his San Simeon specimens. The northern race seems to be or should I say averages flatter with a definite groove outside the siphonal openings, whereas the southern specimens lack this deep groove and are deeper. After seeing all of these specimens I feel that the aulea is only a race instead of a full species, and that Burford's specimens are the key to the intergradation area. It will take a lot more material with the animals for comparison before this problem can be worked out. At present I think I can pick out the extremes as to range, but the in between races are difficult.

Winter is already setting in with heavy frost. All of our land snails have gone into deep soil and things will be quiet until spring. ...

Clear Harbor of Starfish- Operation Starmop was declared a success- Los Angeles Harbor had been cleared of 1500 pounds of harmful starfish by 350 skin divers.

Most of the skin divers who took part in the activity off the middle breakwater were members of the Southern California Council of Skin Divers. Personnel of the California Department of Fish and Game also took part.

Starfish may be responsible for a decline in shell fish in that area, and the creatures pulled from the water's bottom are to be studied by scientists at Morro Bay for possible commercial uses. Largest of the starfish recovered measured 36 inches and weighed 10 pounds.

Some News From Hawaii

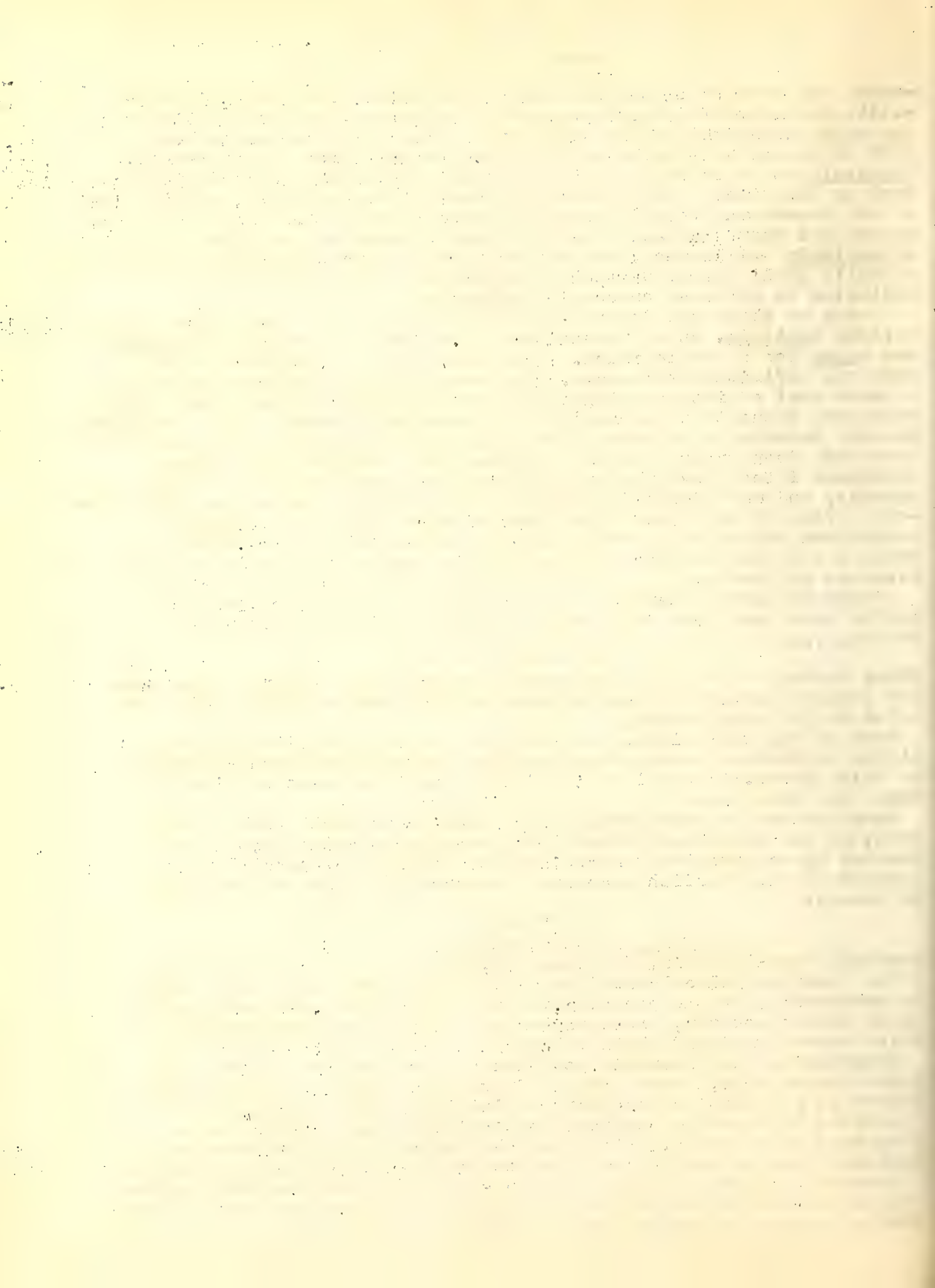
Honolulu Star-Bulletin, Sat. Aug. 22, 1953

" The Hawaiian Malacological Society has reached an all-time high in membership. At the present time there are 109 paid members, in which number however, are a number of Mr. and Mrs. combinations in which husband and wife both belong.

Considering the favorable position of the Hawaiian Islands this is as it should be, where a short drive or a trip to a neighboring island is all that is necessary to indulge your hobby. ..

Limited by time and confined to one locality, many duplicates from that area result, which form the basis for the exchange of shells, which is one of the interesting features of shell collecting.

Several members will try the aqua-lung as an aid to shell collecting Sunday at Haleiwa Bay. Captain R.D. Risser and George Campbell, perhaps others will participate.



Another clipping from Hawaii- Aug. 29, 1953 " Hunting shells with an aqua-lung will be the subject at the September meeting of the Hawaii Malacological Society... Two of the more expert members in this comparatively new field, Albert Kekoa Jr., will preside and will tell of their experiences. The aqua-lung is mostly used by spear fishermen, who report some splendid results from its use, but lately several local shell collectors have become interested. Last Sunday in the Haleiwa neighborhood, Captain R.D. Rissor, George Campbell, Dr. C.M. Burgess and Henry Wilson Jr. tried it out experimentally. Leong K Chock has also used it, and George Lee has used one for some time. Its usefulness as compared with skin diving will probably be pretty thoroughly developed at next Wednesday's meeting. There are several methods of enabling man to stay under water for extended periods, including the compressor method, located in a boat which pumps fresh air to the diver below; the oxygen tank, a self contained unit, whereby oxygen is supplied as needed, and the carbon-dioxide from the breath is chemically removed, and the aqua-lung which is compressed air. The aqua-lung was developed during the last war by a French commander, Jaques Cousteau, working under the very noses of the Germans who then occupied his country. It consists of a stout air tank in which 70 cubic feet of air is compressed to a maximum density of 2,250 pounds to the square inch, a regulator device, from which two hoses lead to the mouth piece and a harness to strap the tank on the diver's back. The regulator is the key to the successful use of the lung. As air is breathed into the diver's lungs, it automatically adjusts the pressure in the lungs to correspond to the depth reached. For this reason in depths of 30 to 40 feet, no decompression period is required, but literature on the subject warns the diver against holding his breath when returning to the surface. Continue to exhale regularly when ascending; otherwise the compressed air in the lungs upon reaching the surface, would rupture the lungs. Another thing that is stressed in the divers using this equipment, they should go in groups of two or more, to be of assistance should help be needed.

Sept. 9, 1953 ... " Starting with the lung on display they demonstrated how it was harnessed on the swimmer, and its operation was explained in detail. ... One factor they emphasized was that all shells are scrutinized on the spot, and if not a good specimen or one of a species they do not have, leave it where it was found.

They operate from a boat, and there are always at least two in the party, frequently more. There is also always a " top" man as they called him, a swimmer, with fins and goggles, who follows the divers wherever they go, keeping an eye on them ready to help should need develop, besides watching for surface dangers. This they said were sharks swimming on or near the surface. It has been their experience that sharks swimming in deeper water never bother them, being only mildly curious, and apparently as respectful of them as they are of the sharks. No real dangerous experiences from this source have ever developed, although Frank said they avoid using a spear on a shark, for a reason you would never guess. They do not want to lose the spear. The results of the shell collecting were then inspected- dozens of large tiger cowries, helmets galore, splendid big orange *Mitra episcopalis*, mammoth *Tonna pediculus* and numerous other smaller shells, some quite rare like *Cypraea gaskoini* and a specimen of dead *Terebra tessalata*.

It is noted that subscriptions to the Honolulu Star-Bulletin is but 50¢ per month by boat mail-

MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA
Nov. 3, 1953

The President, Mrs. Harry Turver, called the meeting to order at 7:40 P.M. welcoming 30 members and two guests.

The minutes of the Oct. 1st meeting were read.

Mr. John Q. Burch reported on nomenclature.

Mr. Morris Schick, who has not attended meetings lately, was reported in good health.

Introductions- Mr. Louis Mackee was introduced as a new member.

Mr. Cate, our member as the new president of the Pacific Shell Club

Mrs. Irene Baker " as president of the Long Beach Shell Club

The secretary read an announcement of the passing of Mrs. Walter Eyerdam.

Mr. and Mrs. Donald Brooks, 1172 $\frac{1}{2}$ West Adams, Los Angeles 7, extended an invitation to the club to meet at their home Dec. 1st at 7:30 P.M. It was moved to accept. Mr. Burford moved to have a drawing of names for Christmas gifts- so ordered.

A Field Trip was announced by Mr. Turver for Nov. 14 at 2:30 P.M. at White's Point.

The secretary introduced the speaker of the evening, Mr. Harry Turver, who reviewed the Nassariidae of the West Coast. After Mr. Turver's talk the group adjourned to inspect the rather complete display of species from the collections of the Museum, the Burche's, and others including of course, the very fine Turver collection.

Meeting adjourned-

Mrs. John Q. Burch- Secretary

Short paper by Mr. E.P. Chace-

List of species that I have taken from Abalone shells brought in to Wilmington by divers (from the coast north of here and from the islands)

Small chitons occasionally
Basiliochiton thamnophora Berry
Odostomias- plenty of O. chacei
Bartsch

Diala
Acmaea rosacea
Crepidula lingulata (common)
" perforans few
" onyx few
" aculeata very few

Caecum 2 or 3 species

Lacunas

Melanelias

Pyrene occasionally

Amphissa very few

Triforis

Cysticus politus (Cooper) Dall

Young Conus and Young Mitra

Seila montereyensis

Epitonium spongiosum Carp.

Tricolia rare

Homolopoma grippi juv. rare
Bittium- slight notch anteriorly
Cerithiopsis-- short straight
Pododesmus cepio Gray
Navea subglobosa
Penitella parva
Lithophagus plumula
Hiatella arctica common
Philobrya setosa few
Volseella --
Several small bivalves

NEW PUBLICATIONS

A Historical Review of the Mollusks of Linnaeus- Part 2- The Class Cephalopoda and the Genera Conus and Cypraea of the Class Gastropoda by Henry Dodge Bulletin of the American Museum of Natural History, Volume 103: Article 1 New York : 1953

This excellent work being done by Henry Dodge will be quoted extensively without a doubt. It is a large report of 134 pages. This is Part 2 of his "A Historical Review of the Mollusks of Linnaeus".

Marine and Fresh-Water Mollusks of the Solomon Islands by Alan Solem Fieldiana. Zoology Chicago Natural History Museum- Vol. 34, No. 22, Oct. 23, 1953. This is a valuable list of species from the Solomon islands.

Circulares del Museo y Bibliotheca De Malacologia De La Habana- Editor : M.L. Jaume, 13 No. 351, Vedado, Habana, Cuba- Price \$1.50 per 100 pages.

Issue of July, 1953- In this issue there is a long and very interesting paper by Morris K. Jacobson titled TEMPER, TEMPER- It is an intriguing story of the various quarrels between eminent conchologists of the past. In English.

Another interesting paper is "Notes From a Collecting Trip in Cuba" by Charles T. Simpson

"Los Moluscos De Cuba en la Historia Fisica y Natural De La Isla De Cuba (Reproduccion de M.L. Jaume). (continuacion). This is a valuable work with each species carefully discussed.

Mrs. Dorothea C. Eyerdam

We were shocked to hear of the unexpected and sudden death of Mrs. Dorothea C. Eyerdam, wife of Walter J. Eyerdam on Sept. 29, 1953. It is almost certain that any conchologist who ever visited Seattle will recall her gracious hospitality. She was in apparent good health until the evening of her death. We enjoyed her company at the meeting of the AMUPD at the Asilomar this spring. She attended the meeting with her husband.

Mrs. Eyerdam was 57 years of age. Born in Germany, she had lived in Seattle for the past 22 years. She had been a Red Cross nurse for the German army during World War I, and was a member of the German Evangelical Church.

Surviving are her husband, Walter J.; a daughter, Mrs. Lilo Homchik, Seattle; two sisters, Mrs. Greta Eyerdam, and Mrs. Edith Kuntz; a brother, Gunther Radmann, all of Germany.

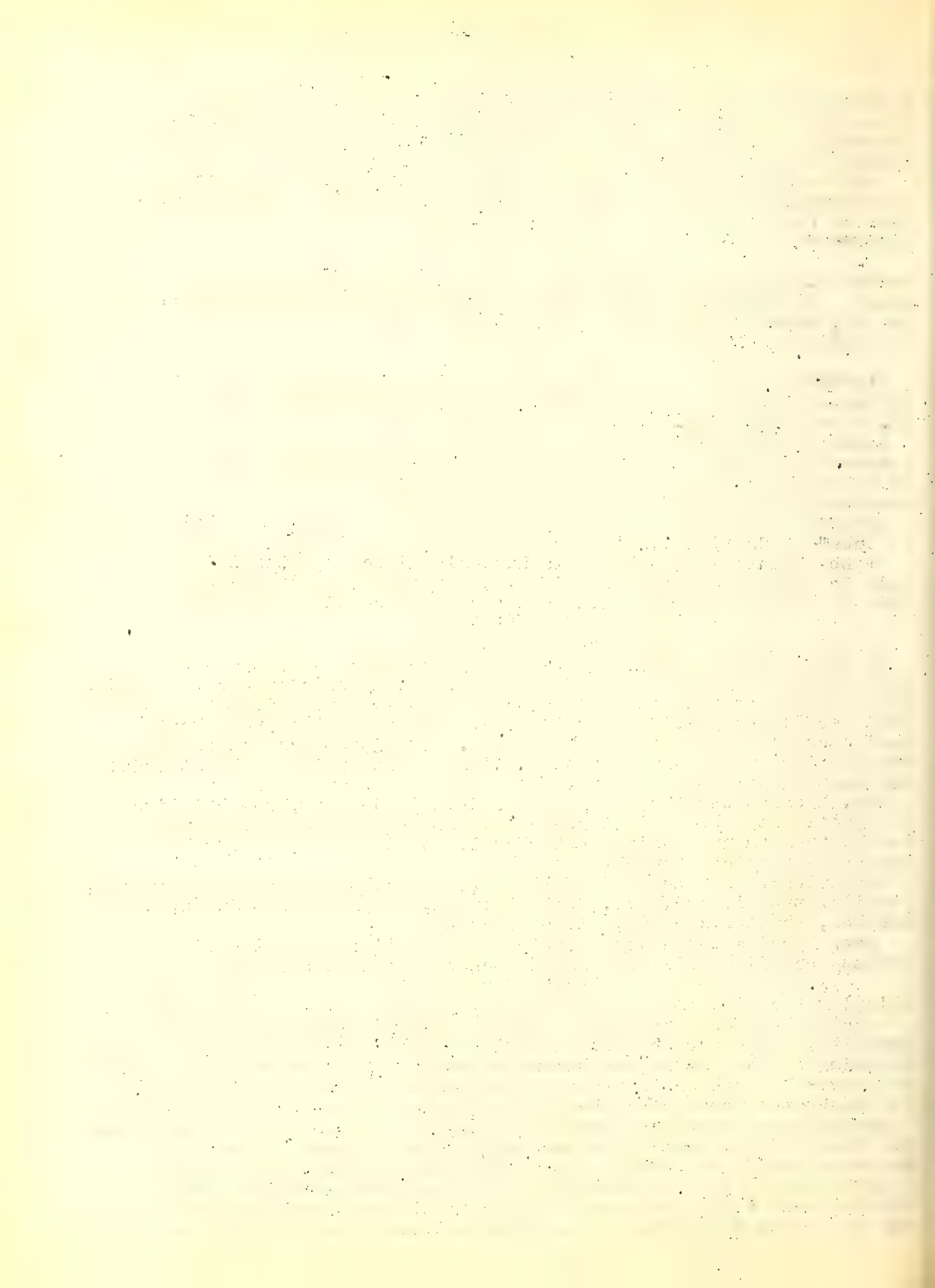
Mrs. Eyerdam was a very heroic woman and lived an extremely adventurous life while serving throughout World War I.

Clipping from the Post Intelligencer, Seattle, Wash., Oct. 2, 1952

"Arctic Town Suffers Itch" Alaska Science Meet Told of Skin Parasite. By Fergus Hoffman. McKinley Park, Alaska. Oct. 1.- Swimming in the Arctic has become a spoiled pleasure for the residents of Beaver because an irritating skin parasite has been discovered in freshwater ponds near the little Alaska village.

Six miles north of the Arctic Circle, the Alaska Science Conference was told today, the affliction called "schistosoma dermatitis" has made its first known appearance in the northland.

Elaborate laboratory tests by the United States Public Health Service show it is the same parasite irritation which not infrequently has afflicted bathers in Seattle's Green Lake. In many other



parts of the nation, the parasite has ruined many popular bathing resorts. Discovery of the parasite was almost accidental at Beaver. Dr. William L. Jellison of the Rocky Mountain Laboratory at Hamilton, Montana, was told by villagers at Beaver of the "slough itch" which had forced them to forego their summer bathing.

To the parasitologist, the description of the villagers matched up. All of the villagers who had been swimming developed a sudden and severe attack of itch before they got home. Those who had not been in the water were not scratching.

Down to the little pond among the horse tails, on the north bank of the Yukon went Doctor Jellison. He found hundreds of snails, regular host to the little almost invisible fork-tailed flukes which cause the itch. Back at the village Dr. Jellison explained how the flukes leave the snails in the summer and attach themselves to the first thing that comes along. When a human is the target, the tiny parasites are complacent as long as their new friend remains in the water, but when he begins to dry off, they hastily burrow into his skin. That's when the fun begins.

SIGN OF THE SNAIL- The snail is fast becoming the symbol of resistance activities against the Russians in East Germany. Simple drawings of the snail are now found on factories and public buildings along with anti-red slogans. Some workers are using the sign of the snail as a method of indication of anti-communism.

In World War II, a similar movement swept across Norway and Denmark during the Nazi occupation. There the symbol of resistance was the turtle. German occupation chiefs soon began to see turtles in their worst dreams. Wherever the sign of the turtle appeared, slowdowns and sabotage were sure to follow.

The first phase of the work of the resistance movement which is using drawings of snails as its symbol is a work slowdown. The drawings began to appear before the first riots and they are now quite familiar to the Reds who rule East Germany. Officials are powerless to keep them from being drawn on walls. It takes only a minute for disgruntled anti-reds to draw a snail and make off.

Honolulu, Sept. 13. Plea is Made for Bigger Children's Museum Here-

We certainly regret not having had the privilege of visiting the Childrens Museum of Honolulu. We have heard nothing but the highest praise for the fine enterprise of Mr. Karl Wallace Greene. These reports have come not only from reading about the museum but by word of mouth from those who have visited Honolulu.

We understand that now the Childrens Museum has actually moved into larger quarters.

Mr. Greene is particularly interested in Conus and has one of the finest and most complete collections of this genus to be seen anywhere.

MINUTES 134

DEC. 1953

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA.

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, California.
All interested persons are cordially invited.

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax 3-5710
Home Ax 2-7965

We have been informed that the Aldrich collection was purchased
by Mr. Roy Gronsky of Balboa, but did not learn whether the new
owner plans to continue as a museum.

Mrs. Haskell sent us some news from the Canal Zone.
Mr. and Mrs. John Bradloy of Waterbury, Conn. were down for two
weeks in July just to shell. The flew down and back and stopped
at Jamaica for a few days of s helling on their way home.

Dr. Zetek went to Ecuador to visit his daughter a few weeks. He
has not been feeling too well. His friends think he has been work-
-ing too hard. He has retired as president of the Natural History
Society and Mr. George O. Lee is the new president. The Society
membership voted unanimously to confer upon Dr. James Zetek the
title of President Emeritus.

We have an interesting note from Thomas L. McGinty of Boynton Beach,
Fla. They have been getting some really rare things in their dredging
including what they think is the first Pleurotomaria to be dredged..

from continental U.S. waters.

NEW PUBLICATIONS

The Nautilus- Vol. 67, No. 2, Oct., 1953. Articles are:
 Magnipelta, A New Genus of Arionidae from Idaho by Dr. H.A. Pilsbry.
 A New Niso from American Waters by Dr. Paul Bartsch
 A New Rissoid Mollusk from Maryland by Dr. Paul Bartsch
 The Scientific Role of the Amateur Malacologist by Dr. David Nicol
 Lymnaea Stagnalis in Egypt by A Fouad Abdel-Ghani
 Land Mollusks From Nuevo Leon, Mexico by H.A. Pilsbry
 A Preliminary Survey of the Land Mollusks of Alachua County, Fla.
 by Edward H. Nicholson (con. from July issue)
 Two New American Species of Strobilops by J.P.E. Morrison.
 Viviparus Multilineatus (Say) 1829, from Florida by J.P.E. Morrison
 The Case of Paludina Multilineata Say by Dr. H.A. Pilsbry
 A Review of Mark's Subgenera of Busycon Roding, Together With
 Remarks Pertaining to the Genus by William K. Emerson
 American Malacological Union - Nineteenth Annual Meeting by Margaret
 C. Teskey.

A Pleistocene Invertebrate Fauna From the Southwest Corner of San
 Diego County, California by William K. Emerson and Warren O. Addicott.
 Transactions of the San Diego Society of Natural History. Vol. XI,
 No. 17, pp 429-444, map.

Systematic Position of the Pelecypod Pliocardia by David Nicol
 Period of Existence of Some Late Cenozoic Pelecypods "
 A Study of the Polymorphic Species Glycymeris americana "
 All from the Journal of Paleontology 1953

Some Viviparous Pelecypod Mollusks by Dr. Arthur D. Howard- The
 Wasmann Journal of Biology, Vol. 11, No. 2, Summer 1953.

Just glancing over the current issue of the Fisheries Newsletter
 of Australia , Oct. 1953 and note the items of some interest.
 There seems to be some friction between the Japanese and the Austr-
 -alian pearlers. There is quite a lengthy article about the pearl-
 -shell fisheries.

Another article about " May Further Restrict Spear Guns". This
 is a method of fishing that is new to me.

And " 2000 whales taken in 121 days". Can you imagine ? I
 didnt know there were so many whales.

I meant to comment on Dr. Howard's paper listed above. The author
 has made some extremely interesting observations on the life histories
 of such species as Philobrya setosa (Carpenter), Kellia suborbicularia
 (Montagu), Cyrella munita (Carpenter) , Psephidea ovalis, Lasaea
rubra etc. There are so many taxonomic papers that a paper studying
 the stages- glochitidium etc. is of unusual interest.

Pliocene Mollusca of Southern Florida -- By Axel A. Olsson and
 Anne Harbison With special chapters on Turridae by William G. Fargo .
 This sizable and important work was discussed in the last issue of
 the Minutes and a number asked me the price of it. It may be had
 by writing to The Academy of Natural Sciences of Philadelphia,
 Philadelphia 3, Pa. Price is \$8 in paper, \$10 in buckram.

1. *Phragmites australis* (Cav.) Trin. ex Steud.

MINUTES OF THE SOUTHERN CALIFORNIA CONCHOLOGICAL CLUB
December 1, 1953

The president, Mrs. Harry Turver, welcomed 28 members at the last meeting of the year which was called to order at the home of Mr. and Mrs. Donald Brooks.

The secretary read the Minutes of the November 3rd meeting, which were approved.

Mr. Harry Turver reported on the field trip of December 21, at White Point. The collecting was good although due to the weather few people turned out.

Mr. Turver, who was named chairman to judge the most interesting exhibit brought in during the year, awarded the President's prize to Mr. D. Burford for his exceptionally fine exhibit of a series of Haliotis.

Dr. Howard R. Hill, chairman of the Nomination Committee presented the following list for nomination:

President	Miss Ruth Coats
Vice-president	Mr. John E. Fitch
Secretary	Mr. D. Burford
Treasurer	Miss Bessie Falconer

It was moved that the Secretary cast a unanimous ballot, and it was so ordered. The slate was unanimously elected. The committees of 1953 were dismissed with thanks.

The meeting adjourned and a social hour followed. Before serving coffee and cookies furnished by the members, there was an exchange of Christmas gifts. A happy time was enjoyed by all.

Mrs. John Q. Burch, Secretary

TWO NEW SUBSPECIES OF VOLUTA MUSICA FROM TOBAGO

By A. Hyatt Verrill

Among a number of shells recently received from the island of Tobago, British West Indies, there are several specimens of two forms or subspecies of Voluta musica that have not been previously described.

VOLUTA MUSICA ALFORDI, Verrill

(Named in honor of Mrs. Kathleen Alford who collected the shells.)

Shape of shell more conical than in most forms of *V. musica*. Nucleus reddish-purple. Spire whorls three. Body whorl with six to seven prominent longitudinal ridges terminating in large, prominent, rather pointed nodules at shoulder. Extremity of canal sharply upturned and with a conspicuous raised spiral plait extending to columella. Ten to twelve plaits on columella. Interior of aperture white tinted with pale orange on edge of lip and columella, and more or less blotched or washed with livid-gray.

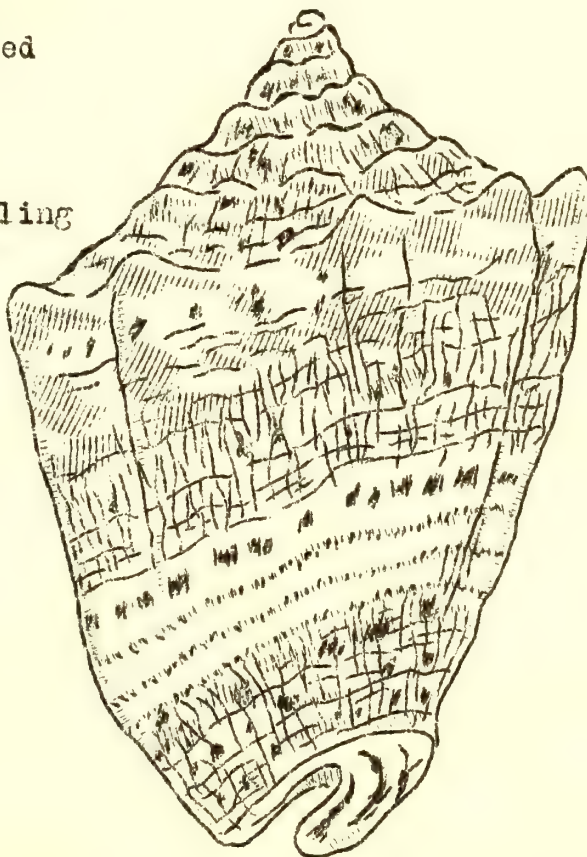
Edge of lip with ten to twelve blackish brown spots. Ground color of shell dull flesh-color but so overlaid by markings of greenish-gray and black that it has the appearance of a gray shell with two lighter flesh-color bands. So-called "musical staff" present but largely concealed by a more or less continuous band of greenish-gray which has a tendency to form darker areas on the ridges. Shoulder nodules flesh color marked with dark gray and brownish spots and with a somewhat interrupted band of brownish black at bases of nodules. Shell everywhere covered with innumerable lines, dots, dashes and crescent-shaped blackish markings and grayish mottling that form a more or less confluent band just below centre of shell. Six to eight very conspicuous crescent-shaped black markings on plait at posterior extremity.

Six specimens.

Length- 50 to 65 mm.

Diameter- 35 to 55 mm.

This shell in some respects is nearer *V. hebraeathan musica*. A larger series of specimens may determine it as a distinct species.



VOLUTA MUSICA ALFORDI, Verrill

VOLUTA MUSICA TOBAGOENSIS, Verrill

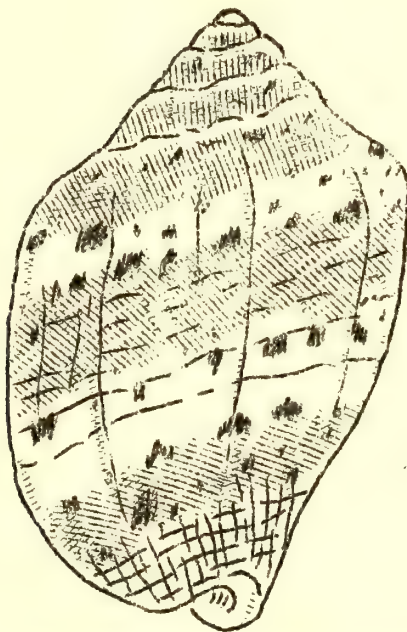
A small "chunky" shell so distinct from all other forms of Voluta Musica that it is recognizable at a glance.

Nucleus white. Two to three whorls in spire. Body whorl with eight to nine low, rounded ridges terminating in rounded ends at the shoulder but not forming distinct nodules. Twelve to fourteen plaits on columella. Five or six incised spiral lines extending from columella to edge of lip near posterior end. Ground color of shell pale salmon or flesh-color with two fawn-colored bands below shoulder and another, less distinct band, just above the terminations of body ridges. Brown areas with slightly darker lines and darker on ridges than between them. Light colored bands with large deep-brown squarish spots at borders of dark bands and with scattered dots of grayish between these. Musical "staff" not present. No spots on edge of lip. Interior of aperture whitish tinted with pale flesh-color and with some faint washings of pale grayish on columella.

Two specimens from Tobago.

Length- 45-55mm.

Diameter- 31-38mm.



VOLUTA MUSICA TOBAGOENSIS, Verrill

MINUTES 135

JAN. 1954

CONCHOLOGICAL

CLUB OF SOUTHERN

CALIFORNIA

Subscription \$2.50 per year

We are now meeting the first Tuesday of every month at 7:30 P.M.
at the Los Angeles Museum, Exposition Park, Los Angeles, Calif.
All interested persons are cordially invited.

Please mail all news to your editor-

John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax 3-5710
Home Ax 2-7965

MARTYN'S ' UNIVERSAL CONCHOLOGIST'

The following personal communication from Mr. Arthur Blok, " Downs Cot", Falmer Road, Rottingdean, Sussex, England will be of interest.
" Dr. Clench's note on Martyn's ' Universal Conchologist' in Minutes 133 leads me to think that you may be interested in recording the particulars of my copy of this work.

It is an 80-plate copy, bound in red morocco with tooled edges and inscribed " The gift of Mr. James Wigglesworth of Halifax to his four nieces Elizabeth, Barbara, Mary and Dorothy Gerst, 1818.

It comprises:- frontpiece of Turritella terebra Lam., titled Aphrodite in Greek characters and surrounded by key-pattern border in gold, two engraved title pages (different), introduction,

preface and Ignatius Born's letters, two pages medals and 80 plates, about $13\frac{1}{4}$ inches by $10\frac{1}{2}$, bearing the engraved plate numbers and letter code at the top right hand corners.

Excepting plates 17 (Patella) aenea) and 57 (Clava maculata) the plates all have 2-line borders consisting of a heavy inner and a light outer line.

I also have several loose plates, some on white paper, similar to that in the bound volume, and some on grey paper, which may be some of Martyn's rejected initial work as mentioned in his preface. They show the shells in different positions from those in the bound volume and in some- although not in all- the work is undoubtedly inferior. They also differ from the bound set of 80 plates in that their borders consist of four lines, arranged as an inner group consisting of a heavy mid-line with a light line on either side of it and an outer light line which encloses the inner group of these. I have a few loose plates with four lines similarly bordered and showing shells not included in Nos. 1 to 80. None of these 4 line bordered plates bear plate numbers.

In case any of the members are interested in the history of this much-discussed work I venture to set down the four leading references:-

Ph. Dautzenberg. Journal de Conch. LXIII, 1917, p 148

W.H. Dall. Proc. U.S. Nat. Mus. No. 1425, XXIX, 1905, p 415

" Proc. U.S. Nat. Mus. No. 1565, XXXIII, 1907, p 185

T. Iredale. Proc. Mal. Soc. XIV, June 1921, p. 131

Dr. William L. Lloyd

Dr. Lloyd, the founder and director of the Cabrillo Beach Museum in San Pedro died on Dec. 25, 1953. He retired a few years ago after nearly 30 years with the Los Angeles Recreation and Park Department. Dr. Lloyd was 73 years of age.

He first became director of the Marine Museum, then located on the old Sunset Pier in 1922, but under his enthusiastic management the collections expanded so rapidly that the Museum had to be moved to Cabrillo Beach where it is visited by at least 300,000 people each year.

He is survived by his widow, Edna; a son, Nelson F. Lloyd of San Bernardino, and a daughter, Mrs. Ruth McLaughlin, of Fort Knox, Ky. He was born in Springtown, Orborn County, Kan., Feb. 11, 1880. He was graduated from the University of Pennsylvania.

Dr. Lloyd and Mrs. Lloyd were active members of the Conchological Club. He will be greatly missed by all of the members.

Aldrich Shell Museum

The fine collection has been purchased by Mr. Roy Gronsky and family from the heirs of the late Fred R. Aldrich.

Plans have already been made to move the Aldrich Museum in its entirety, to one of the large second floor rooms on the west side of Balboa Pavillion. " This will give us three times as much space to house the museum compared to where it was quartered on Bay Island." The plans are to add to the collection as time goes on.

In addition to the fabulous shell collection the Aldrich Museum contains magnificent collections of minerals, and the large cases of Indian skulls, medical instruments and other artifacts are well known. It will be continued under the name of the Aldrich Museum

Miss Joan Demond will spend six months at the U.S. National Museum we have been informed.

Minutes 135, Jan. 1954 p 3
MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA
January 5, 1954

The meeting was called to order by Mr. John Fitch, vice-president, at 7:45 P.M. in the absence of Miss Ruth Coats, president.

Mt. Fitch welcomed thirty-four people, including guests, to our first meeting of the year.

The vice-president announced the passing of Dr. William L. Lloyd, 73, who died Friday, Dec. 25, 1953. Dr. Lloyd was formerly in charge of the Cabrillo Beach Marine Museum. Mrs. Rose Burch had previously written a letter of consolation to the family in the name of the Conchological Club of Southern California.

The availability of Conchological Club stationary as well as the need for 1954 fishing licences for collectors was also announced by Mr. Fitch.

Miss Bessie Faulkner, treasurer, reports a membership of 56 for the year of 1953. Our treasury held \$28.09 on January 1, 1953 and \$28.70 on Jan. 1, 1954.

Mrs. E.P. Chace, chairman of the educational committee, who is 1954 chairman of the Pacific Division of the AMU, announced that the 1954 convention will be held June 17th through June 19th at the University of Southern California.

Dr. W.O. Gregg, membership chairman for 1953, proposed Mr. Morris Latter, Mr. Lloyd Felter, and Dr. Norman Mattox for membership. So ordered.

Mrs. John Q. Burch proposed Mrs. Elizabeth Wister of Chestnut Hill, Pennsylvania, a correspondent, for membership. So ordered.

Mr. John Q. Burch, nomenclature committee chairman, reported on California Fish and Game Bulletin #93, "The Life History of the Cabezon" by Mr. Charles P. O'Connell of Hopkins Marine Station, Stanford University. Figure 14, page 33, showing the shells of abalone removed from the stomachs of fish examined in the research for this publication, was discussed by the group with Mr. Fitch making interesting observations on California abalones.

Miss Bessie Faulkner reported on a recent trip to Guaymas, Mexico and stated that the collecting was fair.

Guests: Dr. Soot-Ryen and his assistant Miss Helen Rost of the museum at Tromsø, Norway.

Mr. Takeo Susuki of the Geology Department of the University of California at Los Angeles.

Mr. and Mrs. Harry Turver reported on "Shells of West Mexico" in the absence of Miss Ruth Coats, scheduled speaker of the evening. An enjoyable discussion was held and opportunity was given to examine the Turver's extensive scrapbook of Mexican collecting.

Mr. Fitch gave a summary of work done at Salton Sea by the Department of Fish and Game, Marine Fisheries Branch during the year 1953 before adjourning the January 5th meeting at 10:00 P.M.

Respectfully submitted,
D.L. Burford, Secretary

Harry Clifford Fassett, the last surviving member of the U.S. Fish Commission team that made the 'Albatross' famous as an oceanographic institution, died Dec. 9, 1953, at the age of eighty-three. He was an active member of the Calif. Academy of Sciences, and especially interested in its library, to which he donated all of his books over a period of years.

NEW PUBLICATIONS RECEIVED

Preliminary Diagnoses of Six West American Species of Octopus by S. Stillman Berry- Leaflets in Malacology, Vol. I, No. 10, Dec. 18, 1953. Descriptions and data are given with Dr. Berry's usual care and thoroughness.

Observations on the Sexual Behavior and Spawning of the Squid, *Loligo Opalescens*, at La Jolla, Calif. by John A. McGowan California Fish and Game, Vol. 40, No. 1, Jan. 1954

This is a carefully prepared paper with 5 illustrations.

Inland Mollusca of Northern Mexico. II Urocoptidae, Pupillidae, Strobilopsidae, Valloniidae and Cionellidae by Henry A. Pilsbry Proc. Acad. Nat. Sci. of Phil. Vol. CV, 1953 pp 133-167, Pub. Dec. 9, 1953. This large and excellently illustrated paper will be essential to all interested in this group.

A Catalogue of Land Shells of Japan including the Okinawa and Agasawara Islands by Tokubei Kuroda. 1953.

This work will be of great value to those working with the land shells of Japan. It is a numbered check list of all species. However, other than the scientific names the entire text is in Japanese.

Venus: The Japanese Journal of Malacology, Nov. 1953

New Genera and Species of the Japanese Gastropods by Tokubei Kuroda

This paper is in English- 2 plates, and text figs.

On the Japanese Species of Trophon by T. Kuroda

This paper is also in English with good figures of all species.

It will be a very useful paper, a genuine contribution.

Land Mollusks of Satonomisaki, the southernmost Kyushu by T. Habe

Review of the Japanese Species of Lacunidae by T. Habe

A New Species of Fossil Siphonalia from the Miyazaki Group by

Junji Itoigawa

Some Observations on the Homing Behaviors of Two Species of

Limpets by R. Ohgushi, T. Miura and M. Kotani* Note* Wish I could read this paper. It interests me but it is entirely in Japanese.

A History of the Japanese Conchology by Tazima Kanamura

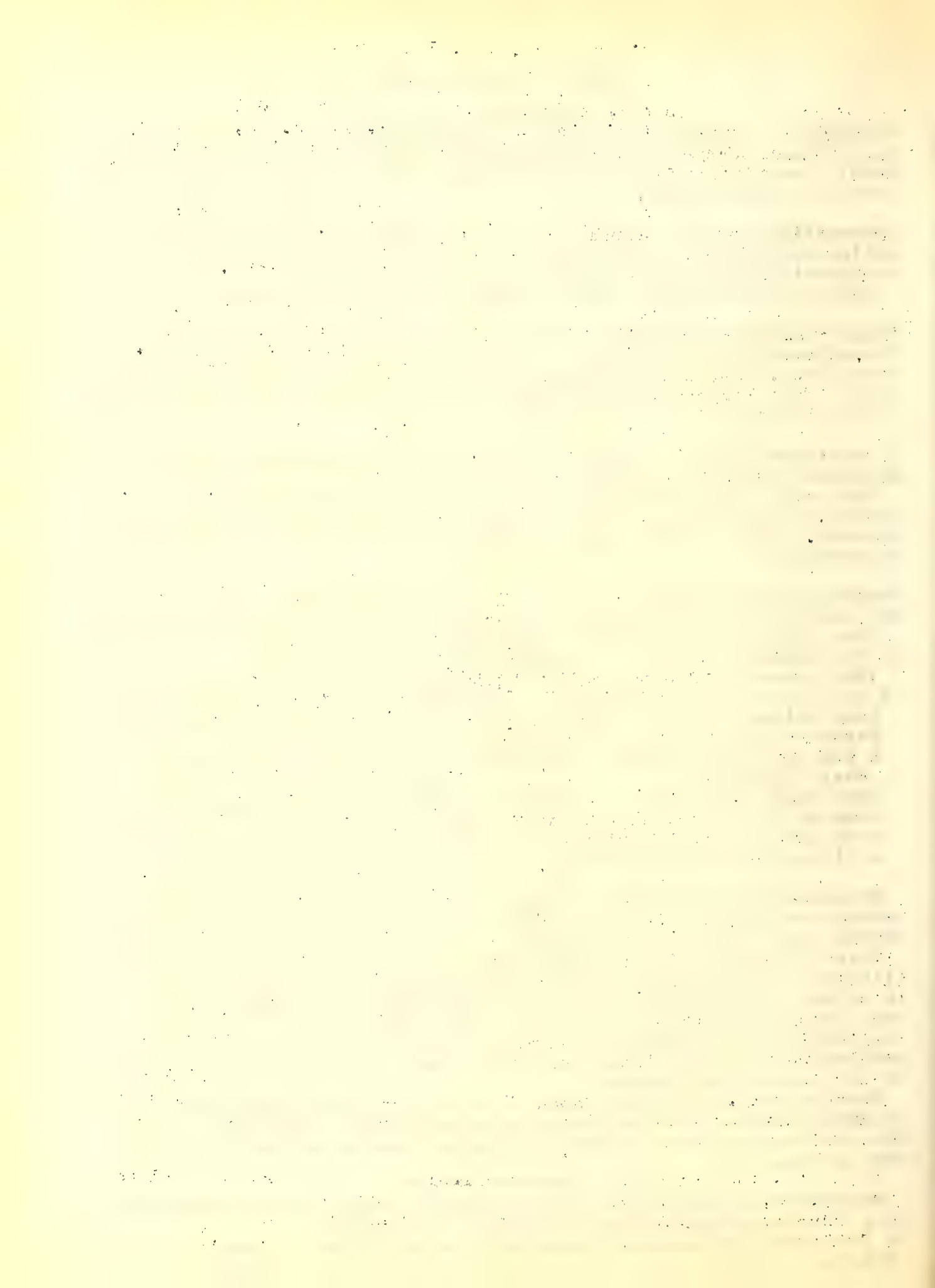
Catalogo De Los Moluscos Marinos De La Patagonia by Alberto R. Carcelles- Anales Del Museo Nahuel Huapi Perito Dr. Francisco P. Moreno Tomo 2 (1950), pp 41-100.

This is really quite an excellent paper. Six pages of excellent illustrations on glossy paper and an extremely interesting map in color. A remarkably complete bibliography of publications on this fauna will often be of great value in itself. All species are arranged systematically giving range, reference to original publication etc. and then also at the back is an alphabetical list of all species and genera.

This is the first I have seen of this but I know that I will use it extensively. Have an idea most of my friends would like a copy also but have no idea whether we can get them or not or if so at what price.

Basteria- Journal of the Malacological Society of the Netherlands Vol. 17, No. 4, Pag. 49-72 19-XII-1953 Contains-

B. Verdwourt and L.A.W.C. Venmans: A new name for a species of *Gulella* (con.)



J.G.J. Kuiper: Bemerkungen uber *Chondrina avenacea* (Brug.) und *Chondrina clienta* (Westl.) von demselben Fundort in Tirol

P. Kaas: Notes on *Loricata*. 1. *Ischnochiton* (*Lepidozona*) *berryanus* LeLoup, 1941, a synonym of *I. (L.) nipponicus* Berry, 1918

C. Beets: *Pteropoda* and *Heteropoda* (?) from Wadi Gharanda, Western Sinai, Egypt.

* The accompanying *Correspondentieblad* Van De Ned. Mal. Vereniging should certainly be mentioned. It is a large mimeographed supplementary work and contains a vast amount of very interesting material. It is though entirely in the language of the Netherlands.

Memoirs of the National Museum of Victoria, Melbourne, Australia
Issued May 18, 1953

This is a large publication of 169 pages, numerous plates and map etc. There are two papers of considerable interest to conchologists which will be mentioned. Others are large articles on such subjects as Pleistocene Foraminifera, two papers on fossil diatoms, tertiary deposits, wild pigs of Australia (origin etc.)

Record of a South African Mollusc, *Haliotis sanguinea* Hanley, from Australia by J. Hope Macpherson. * As might be expected this is from Western Australia but is of great interest and particularly to those of us on this coast who are especially interested in all *Haliotis*.

Catalogue of Quaternary Types and Figured Specimens in the National Museum of Victoria. by Edmund D. Gill.

Journal of the Marine Biological Association of the United Kingdom-
The Plymouth Laboratory- Vol. XXL No. 3 (Feb. 1953) and Vol. XXXII No. 1 (June 1953) and XXXII No. 2 (Oct. 1953)

Of course, these large thick publications deal largely with other groups of marine life but it seems that every issue will contain one or more papers of interest to our study. A few follow:
Observations on *Nucula Turgida* Marshall and on *N. Moorei* Winckworth.
* A very interesting paper on these species with one very excellent plate illustrating the shells with numerous other figures.
The Biomass of the Bottom Fauna in the English Channel off Plymouth by N.A. Holme. * A very thorough paper in 49 pages.
On the Biology of *Glossus Humanus* (L.) (*Isocardia* cor. Lam.) by G. Owen * A very thorough work illustrated with 9 figs.
A New Dredge for Collecting Burrowing Animals by G.R. Forster.
* A very novel device. Wish I could go out and try it out.
Observations on the Breeding and Settlement of *Mytilus Edulis* (L.) in British Waters by P.N.J. Chipperfield. 28pp 8 figs.
* Note* While these are at times valuable, the amount of material of interest to a malacologist is comparatively small, and they are to say the least far from inexpensive. 45 and 47 shillings etc. This means a net cost of over \$20.00 per year for three of them.

Ostrincola Gracilis C.B. Wilson, A Parasite of Marine Pelecypods in Louisiana by Arthur G. Humes- Tulane Studies in Zoology
Vol. 1, No. 8, Dec. 21, 1953

This is a parasitic copepod having as hosts *Crassostrea virginea* G Gmelin, *Modiolus demissus granosissimus* Sowerby, *Mytilus recurvus* Raf., and *Venus mercenaria* L. The paper is well illustrated with three plates of many figures.

A Report on the Robertson Shell Collection - Important Acquisition- by Margaret C. Teskey, Secty. Amer. Mal. Union. From Hobbies, Mag. of the Buffalo Museum of Science. Dec. 1953

At the time of his death Mr. A.M. Strong left some very fine incompleated manuscripts. We will begin running one of them on the Cancellariidae. This will be continued through several issues of the Minutes but should be a very valuable contribution. It has been given us through the courtesy of Dr. Leo Hertlein of the California Academy of Sciences who collaborated with Mr. Strong in so much of his work. Dr. Hertlein has not edited nor completed this work in any way so this is submitted a a preliminary paper to a monograph planned but never completed by Mr. Strong.

It seems to me that at least a portion of Mr. Strong's last letter about this paper written shortly before his death should be given.

" I am enclosing in the blue folder the first draft of a paper on the family Cancellariidae. I have gone into it as far as I canw with the data I have available and there is still a lot of work to be done on it. The introduction needs editing and finishing out. The Academy collection will undoubtedly have additional specimens which will add to the localities and range for the various species. This is particularly needed for the northern species of which the Lowe collection had no specimens and Willett very little. I have none of my own. A better way of listing localities can undoubtedly be worked out. The descriptive notes under the various species will need to be extended in many cases and probably some errors will be found in them. As the whole thing will have to be rewritten I have not attempted to proof read the manuscript.

You folks may not agree with me in regard to the arrangement of genera and subgenera. I am not very well satisfied with the grouping under the subgenus Aphera with the tropical tessellata for the type. It would seem natural to expect that the cold water species should be closer related to the west coast fossil species than to the living warm water fauna. I have not been able to find a subgenus name for theseif such is correct. Merica as used by Dall in his earlier writings does not seem to apply, nor does Sveltia, Gracilis, rhyssa and woodworthi seem to form a group by themselves and I hardly know where to place them. The subgenus Narona might well be placed under Massyla instead of Cancellatia. it has the shape of the former but the plications would fit better with the latter."

* Note* As my friends know, I never apologize for my own errors in spelling or punctuation. Once down it is too much trouble to change it. However, a comment here may be in order. I asked one of my girl employees to type this paper. She was incredulous when I said ' Yes' put two ii in Cancellariidae. I note with a bit of amusement that she took me at my word and at least in some cases came up with Cancellaria, instead of Cancellaria. But if you find any double ii above this comment please just guess at it.

A REVIEW OF THE EASTERN PACIFIC SPECIES IN THE MOLUSCAN FAMILY CANCELLARIIDAE

BY A. M. STRONG

The family Cancellariidae is well represented in the living fauna of the Pacific coast of North and South America in both tropical and temperate waters. While occasionally a few of the species can be collected in the intertidal zone most species live off shore from moderate depths to a thousand fathoms or more. As comparatively little dredging has been done along these shore until within recent years many of the species have been poorly represented in collections and some, even of the earliest described, are as yet only known by the types. The late H. N. Lowe, in his various collecting trips along the coast of West Mexico and Central America, secured specimens of a number of the shallower water forms. They are now in the collection of the San Diego Society of Natural History. Extensive dredging by the Crocker Expedition of 1932 and the Crocker-Beebe Expeditions of 1936 and 1937 in the Gulf of California and along the coasts of Lower California, West Mexico, Central America and Panama resulted in the securing of specimens of many of the species living in depths up to 60 fms. Good series of these are now in the collection of the California Academy of Sciences. This paper is based largely on these collections, which add materially to the known ranges of many of the species.

The first west coast species of Cancellariidae to be described appeared in the Proceedings of the Zoological Society of London for 1832 where Sowerby has nineteen species collected by Hugh Cumings in Central and South America. These were figured in Sowerby's Conchological Illustrations on plates appearing the same year. The H. M. S. Sulphur visited Central America in 1836 and from collections made there Hinds described seven additional species in the Proceedings of the Zoological Society of London for 1844. These were figured in the Zoology of the Voyage of the Sulphur, Mollusca, vol.2. The same specimens or specimens considered to be from the Cumings material were figured by Sowerby in the Theasurus Conchliorum in 1849 and by Reeve in the Conchologia Iconica in 1856 without additional date or localities. These works include most of the known tropical species. The majority of the remaining twenty three species, described at later dates, are from more northern waters or from great depths. Many of these descriptions are in works difficult of access and quite a number of the species were unfigured.

The first subdivision of the original genus Cancellaria was by H. & A. Adams in their Genera of Recent Shells published in 1852. They divided the then known species into a number of named groups but no one species listed under a group name was designated as a type. Dall and others in using these names for genera or subgenera considered the first species named in the list to be the type, but failed to state that such is the case. The first revision of the H. & A. Adams names was by Cossmann in 1899. He selected types for the various groups, seldom using the first name in the list, but nearly always naming west coast species. The grouping used by H. & A. Adams is not now considered to be of much value in dividing the family into genera and subgenera. The characters of the types designated by Cossmann must be used in connection with these names for genera or subgenera. The result is that the subgenera grouping used by Dall and followed by other writers on west coast shells can not be used. In this paper an attempt is made to arrange the west coast species in the original genus Cancellaria into a workable system of genera and subgenera.

INDEX TO SPECIES IN THE FAMILY CANCELLARIIDAE

aeuminate Sowerby-----	12	indentata Sowerby-----	8
affinis C. B. Adams-----	10	io Dall-----	46
affinis Reeve-----	9		
albida Hinds-----	7	laevior Leach-----	48
balboae Pilsbry-----	16	middendorffiana Dall-----	49
brevis Sowerby-----	24	microsoma Dall-----	47
buccinoides Sowerby-----	14	mitriformis Sowerby-----	34
bulbula Sowerby-----	4	modesta Carpenter-----	38
bullata Sowerby-----	30		
		obesa Sowerby-----	1
californica Dall-----	44	oblonga Sowerby-----	43
cassidiformis Sowerby-----	18	obtusa Deshayes-----	28
centrota Dall-----	27	ovata Sowerby-----	2
chrysotoma Sowerby-----	22		
circumcineta Dall-----	37	parava Philippi-----	33
clavatula Sowerby-----	20	peruviana-----	13
cooperi Gabb-----	19	philippii Gossmann-----	33
corbula Dall-----	45	pulchra Sowerby-----	26
corrugata Hinds-----	31	pygmaea C. B. Adams-----	31
couthouyi Jay-----	48		
crawfordiana Dall-----	32	rhyssa Dall-----	39
crenata Hinds-----	9		
cumingiana Petit-----	28	solida Sowerby-----	3
		sowerbyi Crosse-----	34
decussata Sowerby-----	5	subobtusa Petiit-----	28
elata Hinds-----	17	tessellata Sowerby-----	42
exopleura Dall-----	21	tuberculata Sowerby-----	29
		tuberculosa Sowerby-----	29
funiculata Hinds-----	25		
		unalaskensis Dall-----	36
gemmulata Sowerby-----	11	uniplicata Sowerby-----	35
goniostoma Sowerby-----	31	urceolata Hinds-----	10
gracilior Carpenter-----	40		
granosa Sowerby-----	13	ventricosa Hinds-----	6
		woodworthi Dall-----	41
haemastoma Sowerby-----	23		

FAMILY CANCELLARIIDAE

Key to the west coast genera and subgenera

Columella stright, with from one to three plications

' A well developed siphonal fasciole and a stromboid notch present

' ' Umbilicus covered or reduced to a narrow chink----- Cancellaria

' ' ' Varices absent

' ' ' Axial ribs not spinous at the shoulder of the whorls----- (Cancellaria)

' ' ' Axial ribs rising to short spines at the shoulder----- (Euclia)

' ' ' Irregularly placed varices present----- Bivetopsia

' ' Umbilicus open, rather narrow, bounded by the fasciole----- Trigonostoma

' Siphonal fasciole feeble or obsolete, plaits small, oblique----- Massyla

' ' Shell slender, apex pointed, body with a slight callus----- (Massyla)

' ' Shell cylindrical or ovate, body callus strong and wide----- (Aphera)

Columella curved, plaits faint or obsolete----- Admete

GENUS CANCELLARIITA LAMARCK

Cancellariia Lamarck, Men. Soc. Hist. Nat., 1799, Paris, p. 71. Type (by monotypy)

Voluta reticulata Linnaeus, Recent, Florida and West Indies, figured by

Sowerby in This. Conch., vol. 2, Cancellariia, 1849, Pl. 92, fig. 17

Shell oval, variously sculptured or smooth; last whorl ventricose; aperture with a short canal; columella straight, with two distinct folds and terminating with a third, plate-like fold. There is a well developed siphonal fasciole which covers the umbilicus or reduces it to a narrow chink at certain stages of growth and the outer lip shows a shallow stromboid notch, varying in depth with the stages of growth.

SUBGENUS CANCELLARIITA S. S.

Sculpture reticulate, either on the spire or over the entire surface, without varices, the intersections of the axial ribs and spiral cords usually forming rounded nodules but not spinous.

KEY TO THE WEST COAST SPECIES IN THE SUBGENUS CANCELLARIITA S. S.

Sculpture faint or obsolete on the body whorl

' Columella short, upper plait very strong

' ' Body whorl somewhat cylindrical

Length 45, diameter 25 mm ----- obesa

' ' Body whorl tapering anteriorly

Length 35, diameter 20 mm ----- ovata

' Columella longer, plaits oblique

' ' Body whorl smooth, polished

Length 40, diameter 30 mm ----- solida

' ' Body whorl with faint axial sculpture

Length 30, diameter 20 mm ----- bulbula

KEY TO THE WEST COAST SPECIES IN THE SUBGENUS CANCELLARIITA S. S. CONT'D.

- Reticulare sculpture extending over the entire surface
 ' Axial ribs and spiral cords equal in strength and spacing
 ' ' Whorls rounded, not shouldered
 Length 40, diameter 20 mm -----decussata
- ' ' Whorls narrowly, roundly shouldered
 ' ' ' Shell ovate, orange brown
 Length 30, diameter ----- ventricosa
- ' ' ' Shell slender, white
 Length 25, diameter ----- albida
- ' ' Whorls sharply, flatly shouldered
 ' ' ' Axial ribs close spaced, about 20 on the body whorl
 Length 25, diameter 15 mm -----indentata
- ' ' ' Axial ribs wide spaced, about 12 on the body whorl
 Length 20, diameter -----crenata
- ' Axial ribs stronger than the spiral cords
 ' ' Body whorl flattened on the sides
 Length 35, diameter -----urceolata
- ' ' Body whorl well rounded, not shouldered
 ' ' ' Shell thick, with coarse sculpture
 Length 25, diameter 15 mm -----gemmulata
- ' ' ' Shell comparatively thin, with fine sculpture
 ' ' ' ' Axial ribs close spaced
 Length 25, diameter 14 mm -----acuminata
- ' ' ' ' Axial ribs wide spaced
 Length -----peruviana
- ' ' Body whorl angularly shouldered
 ' ' ' Shoulder narrow, sloping
 Length 40, diameter 25 mm -----buccinoides
- ' ' ' Shoulder narrow, flatly tabulated
 Length 17.5, diameter 10.7 mm ----- ns.
- ' ' ' Shoulder wide, flattly sloping
 Length 45, diameter 21 mm -----balboae
- ' ' ' Shoulder wide, almost tabulate
 Length 20, diameter -----elata

1. CANCELLARIITA (CANCELLARIITA) OBESA SOWERBY

Cancellariita obesa sowerby, Proc. Zool. Soc., London, for 1832, p. 52. "Hab. ad oras Americae Centralis (Gulf of Dulce)" also "2 young specimens were brought from Puerto Portrero and an aged specimen was dredged in 15 fms. in the Gulf of Dulce." --- Conch. Ill., 1832, *Cancellariita*, sp. 4, pl. 9, figs. 3, 4. "Puerto Portrero and Gulf of Dulce in 15 fms." --- Thes. Conch., vol. 2, 1849, p. 441, pl. 93, fig. 37 (same localities) --- Reeve, Conch. Ic., vol. 10, 1856, pl. w, fig. 7.. "Gulf of Dulce in 15 fms." -- Tryon, Man. Conch., vol. 7, 1885, pl. 2,

1. CANCELLARIA (CANCELLARIA) OBESA SOWERBY CONTINUED

fig. 17. (Copies the fig. in Reeve) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 210. "Gulf of California to Guayaquil" -- Olsson, Nautilus, vol. 37, 1924, p. 123. "Indian graves, Mancora, Peru." --- Grant & Gale, Men, San Diego Soc. Nat. Hist., vol. 1, 1931, p. 612. (Cites references) --- Pilsbry & Lowe, Proc. Ac. Nat. Sci., Phila., vol. 84, 1932, p. 112. (Cites localities)

Cancellaria ovata Sowerby, these, conch., vol. 2, 1849, p. 441, pl. 92, fig. 2. "Santa Elena, 8 to 10 fms." --- Reeve, Conch. Ic., vol. 10, 1856, pl. 4, figs. 18a, 18b. (same locality) --- Tryon, Man. Conch. vol. 7, 1885, pl. 2, fig. 18. (copies fig. in thes. Conch.)

CROCKER EXPEDITION, 1932

Off Mazatlan, loc. 27581
Off Acapulco, loc. 27572
West Mexico, loc. 27849
Lat. 22 44 N., loc. 27583
Lat. 16 29 N., loc. 27571

BEEBE-CROCKER EXPLD., 1936

Santa Inez Bay, Sta. 141
Santa Inez Bay, Sta. 142
Manzanillo, Sta. 184

BEEBE-CROCKER EXPED., 1937

West Mexico, Sta. 195
Tangola Tangola Bay
Guatemala, Sta. 197
Corinto, Nicaragua
Port Culebra, Costa Rica
Port Parker, Costa Rica
Costa Rica, Sta. 203
Costa Rica, Sta. 214

LOWE COLLECTION

La Paz, Gulf of Calif.
Punta Penasco
Santa Maria Bay
Punta Libertad

- (1) The date used for Sowerby's Conch. Ill. is that given by Shaw in the Proc. Mal. Soc., London, Vol. 8, 1909, p. 333

The adult of this species is ovate, thick and ponderous, with narrowly shouldered whorls and usually tinted orange brown. The sculpture on the young shell and on the spire in the adult is closely reticulated. On the body whorl of the adult both axial and spiral sculpture tends to become irregular or obsolete. The plaits on the columella are very strong, particularly the upper which is nearly at right angles to the axis of the shell. The measurements of the shell given in the original description are; Long. 2.5, lat. 1.55 Poll. (approximately 62 x 39 mm) The largest specimen we have seen is 45 x 25 mm

2. CANCELLARIA (CANCELLARIA) OVATA SOWERBY

Cancellaria ovata Sowerby, Proc. Zool. Soc., London, for 1832, p. 53. "Hab at Sanctam Elanem, Columbiae Occidentalis, 8 to 10 fms." --- Conch. Ill., *Cancellaria*, 1832 sp. 3, pl. 9, fig. 2. "Santa Elena, 8 to 10 fms." --- Fiener, Fam. Canaliferea, Vol. 2, 1841 p. 34, pl. 9, fig. 3. "Coast of Columbia."
Not *Cancellaria ovata* Sowerby in Thes. Conch. or Reeve, Conch. Ic.

The specimen figured by Sowerby in the Conch. Ill. and by Kiener is a uniformly dark shell with the sculpture similar to that of *C. obesa* but more slender with a higher spire. Sowerby in the Thes Conch. and Reeve, under this name, figure a different specimen very similar to that of *C. obesa*. Dall's statement that the two are synonymous is probably based on a comparison with Reeve's figure. However as the only records for the species are references to the original specimen from Ecuador it must be considered of doubtful standing.

- (1) The date used for Kiener's plates is that given by Sherborn & Woodward in the Proc. Mal. Soc., London, vol. 4, 1901, p. 217
- (2) Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 281

3. CANCELLARIA (CANCELLARIA) SOLIDA SOWERBY

Cancellaria solida Sowerby, Proc. Zool. Soc., London, for 1832, p. 50, "Hab ad littora Americae, Real Llejos; Santa Elena, 8 to 10 fms." --- Conch. Ill. sp. 6, pl. 9, fig. 6. (same localities) --- Thes. Conch., Vol. 2, *Cancellaria*, 1849, p. 440, pl. 92, fig. 4. "Real Llejos in Central America" --- Reeve, Conch. Ic. vol. 10, *Cancellaria*, 1856, pl. 1, figs. 2a, 2b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, p. 72, pl. 3, fig. 48. (copies the fig. in Thes. Conch.) --- Pilsbry & Lowe, Proc. Ac. Nat. Sci., Phila. vol. 84, 1932, p. 112. "Montejo Bay"

CROCKER-BELBE EXPED., 1937

LOWE COLLECTION

Near Acapulco, Sta. 189
Guatemala, Sta. 197
El Salvador, Sta. 198

Montejo Bay
Gulf of California

This shell is rather thick, globosa, dull orange color, in some specimens fading to fawn. The first few whorls are finely decussated while the body whorl is nearly smooth and polished. The species is quite similar to *C. obesa*, differing in the smoother, more polished surface, in the longer, more deeply notched canal, and in the somewhat less prominent columellar plaits.

4. CANCELLARIA (CANCELLARIA) BULBULA SOWERBY

Cancellaria bulbula Sowerby, Proc. Zool. Soc., London, for 1832, p. 55. "Hab at littora Americae, 2 Jr. specimens, Real Llejos, 8 to 10 fms." --- Thes. Conch., vol. 2, 1849, pp. 440, 441, pl. 95, fig. 64 (same locality) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 18, figs. 84a, 84b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, p. 73, pl. 3, fig. 49. (copies fig. in Thes. Conch.) --- Pilsbry & Lowe, Proc. Ac. Nat. Sci., Phila., vol. 84, 1932, p. 112. "hermit crab specimens on mud flats, Montejo Bay"

LOWE COLLECTION

This shell is said by Reeve to be oblong-pyriform, with the spire strongly decussated and the axial ribs extending to the body whorl, which is smooth except for striation on the lower part of the base. It was originally described from two young specimens from Real Llejos (Corinto, Nicaragua) and was not figured until 17 years later. With the exception of Pilsbry & Lowe's identification from Montejo Bay, Panama, all references are said to be to the original specimens.

5. CANCELLARIA (CANCELLARIA) DECUSSATA SOWERBY

Cancellaria decussata Sowerby, Proc. Zool. Soc., London, for 1832, p. 55. "Hab ad oras Americae Meridionalis et Centralis (Panama; Puerto Portrero; 10 to 13 fms." --- Conch. Ill., *Cancellaria*, 1832, sp. 8, p. 9, fig. 8. (Same localities.) --- Thes. Conch., vol. 2, 1849, p. 446, pl. 92, fig. 3. (same localities) --- C. B. Adams, Panama Shells, 1852, sp. 156, p. 134. "Panama, 2 specimens" --- Reeve, Conch. Ic., vol. 10, 1856, pl. 5, figs. 22a, 22b, "Panama" --- Tryon, Man. Conch., vol. 7, 1885, p. 70, pl. 2, fig. 27. (copies fig. in Reeve) --- Pilsbry & Lowe, Proc. Ac. Nat. Sci., Phila., vol. 84, p. 112

CROCKER EXPED. 1932

BEEBE-CROCKER EXPED.

LOE COLLECTION

Magdalena Bay, loc. 26588	Punta Arenas, sta. 136	Manzanillo in 20 fms.
Off Mazatlan, loc. 27580-1	Manzanillo, Sta. 184	
Off Acapulco, loc. 27572		
Off Oaxaca, Loc. 27567-8-9		
Off Cape San Lucas, loc. 27583		

Shell somewhat globose, reddish brown or fawn-colored, sometimes with a light band on the periphery. The sculpture is finely, evenly decussated over the entire surface. The evenly rounded whorls are a marked character by which it can be separated from similarly sculptured species. In the original description the measurements are given as Long. $1 \frac{5}{10}$, lat. $\frac{8}{10}$ poll. (approximately 37.5×20 mm)

6. CANCELLARIA (CANCELLARIA) VENTRICOSA HINDS

Cancellaria ventricosa Hinds, Proc. Zool. Soc., London, for 1843, p. 47. "Hab. the W. Coast of America between $12^{\circ} 28'$ and $24^{\circ} 38'$ N. Lat., viz. San Blas; Gulf of Magdalena in California, in 7 fms." --- Zool. Voy, Sulphur, Moll., 1844, p. 41, pl. 12, figs 11, 12. "Realejo in 60-70 fms.; San Blas; Gulf of Magdalena in 7 fms." --- Sowerby, Thes. Conch., Vol. 2, 1849, p. 443, pl. 95, fig. 77, "Realejos, on west coast of America" --- Reeve, Conch. Ic., Vol. 10, 1856, pl. 10, figs. 47a, 47b. "Realejos; Gulf of Magdalena." --- Tryon, Man Conch. vol. 7, 1885, p. 70, pl. 2, fig. 38 (copies fig. in Reeve) --- Pilsbry & Lowe, Proc. Ac. Nat. Sci., Phila., vol. 84, 1932, p. 112, "Acapulco in 20 fms." --- Strong, Hanna & Hertlein, Proc. Calif. Acad. Sci., 4th ser., vol. 21, No. 10, 1933, p. 118. "Acapulco"

CROCKER EXPEDITION

CROCKER-BEEBE EXPED. 1937

LOWE COLLECTION

Punta Arenas, loc. 27557	Port Culebra, Sta. 195	Off Acapulco in 20 fms.
Off Acapulco, loc. 27527	Guatemala, Sta. 197	

The sculpture and color of this species is very similar to that of *C. decussata* Sowerby but the whorls are narrowly, roundedly shouldered giving a more pointed appearance to the spire. In the original description the measurements are given as, Axis 15 lin. (Approximately 30 mm)

7. CANCELLARIA (CANCELLARIA) ALBIDA HINDS

Cancellaria albida Hinds, Proc. Zool. Soc., London, 1843, pp. 47, 48. "West coast of America $2^{\circ} 27'$ South and $9^{\circ} 55'$ North Lat., viz. Bay of Guayaquil, Panama, and Veragua, 7 to 23 fms." --- Zool. Voy, Sulphur, Moll., vol. 2, 1844, p. 42, pl. 12, figs. 9, 10. (same localities) --- Sowerby, Thes Conch., vol. 2, 1849, p. 442, pl. 94, fig. 43. (no locality given) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 10, figs. 45a, 45b. (original localities given) --- Tryon, Man. Conch., vol. 7, 1885, pl. 69, pl. 2, fig. 23. (copies the fig. in Reeve); --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 209, "Range: Nicaragua to Guayaquil". --- Pilsbry & Lowe, Proc. Ac. Nat. Sci., Phila., vol. 84, 1932, p. 112. "Dredged in 20 fms. Acapulco"

CROCKER-BEEBE EXPED., 1937

CROCKER EXPEDITION

West Mexico, Sta. 192
Port Guatulco, Sta. 195
Tangola Tangola, Sta. 196
Port Culebra, Sta. 206
Port Parker, Sta. 203

LOWE COLLECTION

Acapulco, loc. 27572-3	Acapulco in 20 fms
Mazanillo, loc. 27574	Manzanillo in 20 fms
West Mexico, Lat. $16^{\circ} 39'$ N., loc. 27571	

This is a small, rather slender shell with evenly reticulated sculpture and narrowly shouldered whorls somewhat puckered at the sutures. It is easily recognized by the color, which is uniformly white or white with a few irregular brown lines. In the original description the measurement is given as, Axis 13 lin. (Approximately 25 mm) All the specimens we have seen are much smaller.

8. CANCELLARIA (CANCELLARIA) INDENTATA SOWERBY

Cancellaria indentata Sowerby, proc. Zool. Soc., London, for 1832, p. 54, "Hab Panama" Conch. Ill., *Cancellaria*, 1832, sp. 11, pl. 10, fig. 10 (not pl. 9, fig. 9, see *C. crenata* Hinds) --- Kiener, Fam. Canalifera, vol. 2, 1841, p. 29, pl. 9, fig. 2 (not pl. 8, fig. 4) "Mer du Sud, la cote de panama." --- Sowerby, Thes. Conch., vol. 2, 1849, p. 444, pl. 92, fig. 7. "Panama" --- Reeve, Conch. Ic., vol. 10, 1856, pl. 9, figs. 41a, 41b. "Panama" --- Tryon, Man. Conch., vol. 7, 1885, p. 70, pl. 3, fig. 30. (copies fig. in Reeve) --- Tomlin, Jr. of Conch., London, vol. 18, 1927, p. 157. "Coiba, 1 dead in 30-12 fms." --- Pillsbury & Lowe, Proc. Acad. Nat. Sci., Phila., vol. 84, 1932, p. 112. "Dredged at Acapulco; Manzanillo." --- Strong, Hanna & Hertlein, Proc. Cal. Acad. Sci., 4th ser., vol. 21, 1933, p. 118. "Acapulco, Mexico."

CROCKER EXPED., 1932

CROCKER-BEEBE EXPED., 1936

LOWE COLLECTION

Off Acapulco, loc. 27573

Off Punta Arenas, Gulf of Cal.

Acapulco

Off Manzanillo, loc. 27574

Sta. 136

Manzanillo

Off Corientes, loc. 27584

Off Manzanillo, Sta. 184

Off Oaxaca, loc. 27568-9

Off Punta Arenas, Costa Rica CROCKER-BEEBE EXPED., 1937

Port Guatulco, Mex., Sta. 195

Fort Parker, Costa Rica, Sta. 203

Port Culebra, Costa Rica, Sta. 206

Costa Rica, Sta. 214

Panama, Sta. 221

This species has the reticulated sculpture sharper than in the preceding species. The whorls are sharply angulated at the shoulder with a strong spiral cord at the angle which rises to sharp points at the intersections with the axial ribs. It is a reddish-brown species easily recognized by the shape of the angulation. In the original description the measurements are given as, Long. 1.1, lat. 6 poll. (Approximately 25 x 15 mm.)

9. CANCELLARIA (CANCELLARIA) CREMATA HINDS

Cancellaria indentata Sowerby, in part, Conch. Ill., 1832, Pl. 9, fig. 9. "Panama"

--- Kiener, Icon. Conch., Fam. Canalifera, Vol. 2, 1841, pl. 8, fig. 4.

"Panama" --- Sowerby, Thes. Conch., vol. 2, 1849, pl. 95, fig. 80

Cancellaria Cremata Hinds, Proc. Zool. Soc., London, for 1843, p. 48, "Hab. Bay of Panama." (A new name for Conch. Ill., pl. 9, fig. 9) --- Tryon, Man. Conch., vol. 7, 1885, pl. 2, fig. 29. (copies fig. in Thes Conch.)

Cancellaria affinis Reeve, Conch. Ic., vol. 10, 1856, pl. 9, fig. 39 (a new name for *Cancellaria indentata* var, Sowerby) --- Tryon, Man. Conch., vol. 7, 1885, pl. 3, fig. 32. (Copies fig. in Reeve)

CROCKER-BEEBE EXPED., 1937

Port Guatulco, Mexico, Sta. 195

Hinds states in the text, "The figures in Conch. Ill., *Cancellaria* 9 and 10, appear to me to represent two distinct species, both of which were collected by the Sulphur. Fig. 10 corresponds more closely with the description of *Indentata* and to this I would limit the species." Sowerby in Thes. Conch. states, "After comparing carefully the gradations of the species I am lead to regard the variety named *C. crenata* by Hinds as

MINUTES 136

FEB. 1954

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We have decided to try something a little different in paging. It has been suggested that perhaps it would be better to number the pages consecutively throughout the year rather than to start with page 1 in every issue. Therefore this will be page 15, 1954. The issues will be numbered as usual.

The news, reviews etc, will follow on page 23.

The A.M. Strong "A Review of the Eastern Pacific Species of the Molluscan Family Cancellariidae" will be continued in the following pages 16 to 22 Inc.

correctly included in this species (*C. indentata* Sowerby.) Neither authors mention the number of specimens examined but it was almost certainly not large. We follow Hinds in considering it a distinct species differing from *C. indentata* in the somewhat smaller size with wider spaced axial ribs and spiral cords cutting the surface into deep, square pits.

10. CANCELLARIA (CANCELLARIA) URCEOLATA HINDS

Cancellaria urcelota Hinds, Proc. Zool. Soc., London, for 1843, p. 47. "Gulf of Papagayo in 7 to 14 fms.; San Blas in 7 fms." --- Zool. Voy. Sulphur, Moll., vol. 2, 1844, pl. 12 figs. 7, 8. (Same localities) --- Sowerby, Thes. Conch., vol. 2, 1849, p. 443, pl. 94, fig. 48. (Same localities) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 5, figs. 23a, 23b. "Gulf of Papagayo and San Blas, 7-14 fms." --- Carpenter, Mazatlan Catalogue, 1856, p. 380. "Mazatlan, very rare" Tryon, Man. Conch., vol. 7, 1885, p. 69, pl. 2 Fig. 20. Ocopies Reeve's fig. 23b) --- Grant & Gale, Mem. San Diego Soc. Nat. Hist., vol. 1, 1931, p. 613, 614. (cites references) --- Pilsbury and Lowe, Proc. Acad. Nat. Sci., Phila., vol. 84, 1932, p. 112 "Dredged in 20 fms. Guaymas, Corinto, San Juan del Sur; beach shells at La Paz and Montijo Bay." --- Jordan, Contrib. form Dept. Geol., Stanford Univ., vol. 1, No. 4, 1936, pp. 154, 155. "Magdalena Bay, Pleistocene" *Cancellaria affinis* C. B. Adams, Panama Shells, No. 154, p. 132, 133 "Panama" --- Suppl. Rept. British Assoc., 1854, p. 549 --- Proc. Zool. Soc., London, for 1863, p. 348. (Smithsonian Reprint, pp. 35, 183)

CROCKER EXPEDITION

CROCKER - BEEBE EXPED. 1936

LOWE COLLECTION

Magdalena Bay, loc. 27588

Punta Arena, Gulf of Calif

Guaymas

Off Mazatlan, loc. 27581

Sta. 136

La Paz

West Mexico, Lat. 22 44 N

CROCKER - BEEBE EXPED. 1937

Corinto

Loc. 27583

San Juan del Sur

West Mexico, Lat 16 39 N.

Tangola Tangola Bay

Montijo Bay

Loc. 27571

Santa Maria Bay

San Felipe

This species is usually compared with *C. obesa* Sowerby but is much nearer to *C. decussata* Sowerby, differing in the narrowly rounded shoulder to the whorls and in having the axial ribs distinctly stronger than the spiral cords. A peculiar flattening on the sides of the body whorl is quite distinct from the other similarly sculptured species. In the original description the measurements are given as, Axis 16 lin. (Approximately 35mm) and the color from brown to straw color.

Cancellaria affinis C. B. Adams has not been figured but Carpenter examined the original specimens and states that they are closely allied to *C. urceolata* Hinds. As the description fits quite well for a specimen of the latter species which was not recognized by Adams tho common in the Panama fauna it seems best to place it here as a synonym.

Several references to *Cancellaria candida* Sowerby, a species in the Polynesian fauna, from west localities are probably misidentifications for *C. urceolata* Hinds. The two species are quite similar

11. CANCELLARIA (CANCELLARIA) GEMMULATA SOWERBY

Cancellaria gemmulata Sowerby, Proc. Zool. Soc., London, for 1832, P. 55. "Hab in sinum Nocoio, Americae Centralis." --- Conch. Ill., *Cancellaria*, 1832, sp. 7, pl. 9, fig. 7. "Gulf of Nocoio" --- Thes. Conch., vol. 2, 1849, p. 446, pl. 92, fig. 14. (same locality) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 10, figs 48a, 48b. (same localities) --- Tryon, Man. Conch., vol. 7, 1885, p. 69, pl. 2, fig. 24. (Copies fig. in Reeve) --- Tomlin, Jr. of Conch., London, vol. 18, p. 1927, p. 1927, p. 157. "Dead at Tagus Cove"

CROCKER-BEEBE EXPED., 1937

LOWE COLLECTION

Port Parker, Costa Rica, Sta. 203
Piedra Blanca
Costa Rica, Sta. 214

Gulf of California

This a solid, somewhat globose, dull white shell with strong rounded axial ribs crossed by narrower spiral cords. It is a very distinct species easily recognized by the shape and sculpture. In the original description the measurements are given as, Long. 1, lat. 13/20 poll. (approximately 25 x 15 mm.)

12. CANCELLARIA (CANCELLARIA) ACUMINATA SOWERBY

Cancellaria acuminata Sowerby, Proc. Zool. Soc., London, for 1832, p. 53. "Hab. ad Guacomayo, Americae Centralis". --- Conch. Ill., *Cancellaria*, 1832, sp. 5, pl. 9, fig. 5. "Guacomayo, 10-12 fms." --- Thes. Conch., vol. 2, 1849, p. 458., pl. 92, fig. 1. (same locality) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 1, fig. 4a, 4b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, pl. 2, fig. 19. (copies fig. in Thes Conch) --- Grant & Gale, Mem. San Diego Soc. Nat. Hist., vol. 1, 1931, p. 642, 643.

Grant & Gale, under *C. obesa* Sowerby, state "The higher spired form was named *acuminata* by Sowerby and may prove to be a variety." The only record is to the original specimen collected by Cuming, and the figure shows a banded shell much the shape of *C. decussata* Sowerby. The rounded axial ribs extend over the entire surface of the body whorl and are crossed by finer spiral cords. It would seem to be quite different from a young specimen of *C. obesa* of the same size. In the original description the measurements are given as Long. 9/10, lat. 11/20 poll. (approximately 25 x 14 mm)

13. CANCELLARIA (CANCELLARIA) PERUVIANA , new name.

Cancellaria granosa Sowerby (in part), Conch. Ill., *Cancellaria*, 1832, pl. 10, fig. 16 (not fig. 17) "Hab unknown" --- Kiener, Icon, Conch., Fam. Canaliferes, vol. 2, 1841, pp. 30, 31, pl. 8, fig. 3. "Peru" --- Lamarck, An. Sans Vert., vol. 9, 1843, pp. 415, 416. "Habite les cotes du Peru." --- Reeve, Reeve, Conch. Ic. vol. 10, 1856, pl. 9, fig. 10. "Peru".

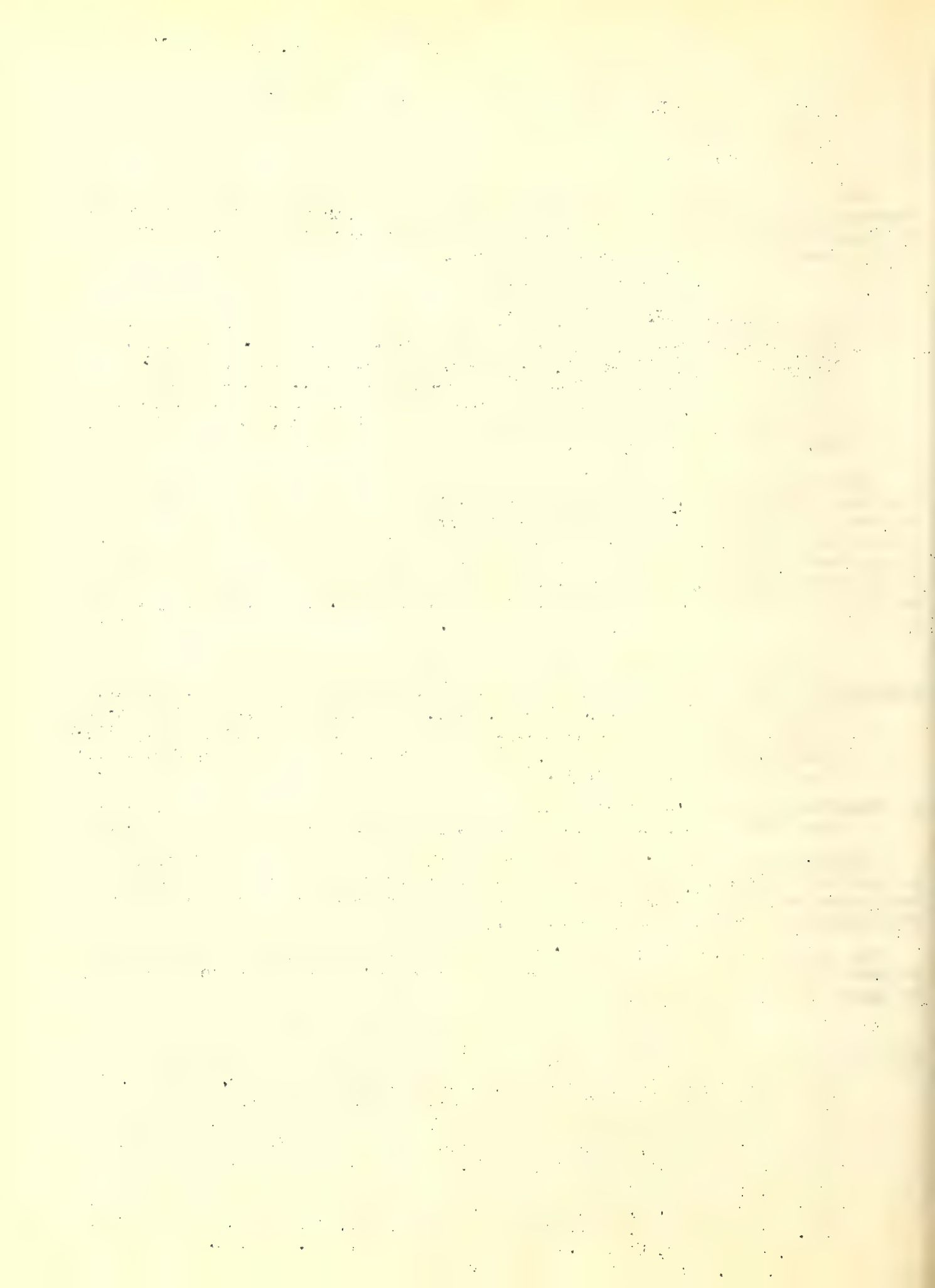
Not *Cancellaria granosa* Sowerby, Conch. Ill., *Cancellaria*, 1832, pl. 10, fig. 17. --- Thes. Conch., vol. 2. 1849, p. 443, pl. 95, figs. 58, 59. "Van Dieman Land.

Sowerby in the Thes. Conch, fixes the name *C. granosa* on the fig. 17 (fig. 16 exclusa) of the Conch. Ill. As neither Kiener or Lamarck designate which figure the refer to it would seem necessary to apply the name *granosa* to the Australian shell. This leaves the Peruvian shell, Conch. Ill. fig. 16, without a name.

The figure shows a shell with the sculpture quite similar to *C. urceolata* Hinds, but with the whorls roundly shouldered and the body whorl not flattened on the sides. The spire is also much higher.

14. CANCELLARIA (CANCELLARIA) BUCCINOIDES SOWERBY

Cancellaria buccinoides Sowerby, Proc. Zool. Soc., London, for 1832, p. 54. "Hab. ad oras Meridionalis et Centralis (Real Llejos; Iquique; Callero; Puerto Portrero)"; Conch. Ill., *Cancellaria*, 1832, sp. 10, pl. 10, fig. 11. (same localities) --- Thes. Conch., vol. 2, 1849, p. 44, pl. 92, figs. 10, 11. (same localities) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 4, figs. 15a, 15b. 16a, 16b. (same localities) --- Tryon, Man. Conch., vol. 7, 1885, p. 67, pl. 1, figs. 6, 7, 8. (Copies figs in Thes. Conch and in Reeve) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 209. "Nicaragua to Mejillones, Chile". --- Jordan, Contrib. Stanford Univ., Geol. Sci., vol. 1, No. 4, 1936, p. 154. "Magdalena Bay, Pleistocene"



The original figure shows a shell quite similar in shape to *C. indentata* Sowerby but with coarser sculpture in which the axial ribs are stronger than the spiral cords. The whorls are narrowly, flatly shouldered. Reeve states that the shell is livid flesh colored or brown, obscurely banded. The two specimens he figures show a good deal of variation. In the original description the measurements are given as Long. $1 \frac{5}{10}$, lat. $9 \frac{9}{10}$ poll. (approximately 40×25 mm)

15. *CANCELLARIA* (*CANCELLARIA*)

Cancellaria

CROCKER-BEEBE EXPED. 1936

Off. Punta Arena, Gulf of California

This is a small species with a persistent, brownish epidermis, tufted at the shoulder of the body whorl. The whorls flatly tabulated and the axial ribs much stronger than the spiral cords. The measurements of the type are length, 17.7; maximum diameter, 10.7 mm

16. *CANCELLARIA* (*CANCELLARIA*) *BALBOAE* PILSBRY

Cancellaria Balboae Pilsbry, Proc. Ac. Nat. Sci., Phila., vol. 83, 1931, p. 439, pl. 41, figs. 7, 8. "Bay of Panama, one mile out from mouth of Rio Grande, near Boca, in 10-40 fms.; Panama on shore."

This is a oblong shell with the whorls broadly, slopingly shouldered, sculptured with strong, retractive, retractive, axial ribs, crossed by narrower spiral cords. The general shape is similar to that of *C. decussata* Sowerby, which has rounded, not shouldered whorls. The sculpture is quite different from the other shouldered west coast species. Pilsbry states that the color is "pale brown with a white band on the middle of the basal slope and a broad brown zone below it." The measurements are given as, length, 45.5; diam. 21 mm

17. *CANCELLARIA* (*CANCELLARIA*) *ELATA* HINDS

Cancellaria elata Hinds, Proc. Zool. Soc., London, for 1843, p. 48. "A single specimen was obtained at Panama from 30 fms." -- Zool. Voy. Sulphur, Moll., vol. 2, 1844, p. 42, pl. 12, figs. 3, 4. (same locality) --- Sowerby, Thes. Conch., vol. 2, 1849, p. 545, pl. 96, figs. 94, 95. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, p. 76, pl. 4, fig. 65 (copies fig. in Voy, Sulphur)

The species is shown by the figure to be slender with a broad, almost tabulate shoulder. The sculpture is of strong, rounded, retractive, axial ribs crossed by much finer spiral threads. The tabulation to the whorls is wider than is the case in any other species in the group and this, together with the sculpture, should make the species easily recognizable. All references are to the original specimen from Panama

SUBGENUS *EUCLIA* H. & A. ADAMS

Euclia H. & A. Adams, Gen. Rec. Shells, vol. 1, 1854, p. 277. Type (By subsequent designation), (1) *Cancellaria cassidiformis* Sowerby, living, west coast of America.

Progabba Dall, Proc. Biol. Soc. Wash., vol. 31, 1919, p. 138; Proc. U. S. Nat. Mus. vol. 56, 1919, p. 306. Type (by original designation) *Cancellaria cooperi* Gabb, living, California

H. & A. Adams listed four species under *Euclia*. Cossmann in 1899 seems to have been the first to designate the type. Dall considered the first species in the original list, *C. solida* Sowerby, was the type. Some of the characters of the two species are quite different, but the similarity of *C. cassidiformis* to *C. cooperi* makes Dall's new subgenus unnecessary.

Dall evidently intended to include a number of west coast species in his subgenus *Progabba* as he states; "I have come to the conclusion that the California species of the genus *Cancellaria*, in its wider sense can not properly be included in any of the groups into which it has hitherto been divided." As he only gives the type and lists no other species under his new subgenus there is no way of knowing what he considered to be the distinguishing characters. As here used the subgenus *Euclia* in the west coast fauna is restricted to two species, characterized by having wide spaced axial ribs rising to spines at the shoulder of the whorls.

KEY TO THE WEST COAST SPECIES IN THE SUBGENUS EUCLIA

Shell broad, somewhat pyriform

Length 60, diameter 40 mm ----- *Cassidiformis*

Shell slender, somewhat fusiform

Length 80, diameter 35 mm ----- *Cooperi* - - -

(1) Cossmann, Ess. Paleo. Comp., vol. 3, 1899, p. 10

18. CANCELLARIA (EUCLIA) CASSIDIFORMIS SOWERBY

Cancellaria cassidiformis Sowerby, Proc. Zool. Soc., London, for 1832, p. 53. "Hab. ad Panama, 16 fms." --- Conch. Ill., 1834, sp. 23, pl. 11, fig. 22. "Panama, 16 fms." --- Thes. Conch., vol. 2, 1849, p. 439, pl. 92, fig. 15. "same locality) --- Kiener, Iconig., Fam. Canaliferes, vol. 2, 1841, pp. 24, 25, pl. 4, fig. 2. (Same locality) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 2, figs. 8a, 8b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, p. 66, pl. 1, fig. 1. (copies fig. in Thes. Conch.) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 209. "Range, Gulf of Calif. to Peru.) --- Olsson, The Nautilus, vol. 37, 1924, p. 23. "Common on Indian graves near Negritos, Que. Man cora, Peru; living at Mancora." --- Grant & Gale, Mem. San Diego Soc. Nat. Hist., vol. 1, 1931, pp. 620, 621. (cites references and fossil localities.) --- Pilsbry & Lowe, Proc. Acad. Nat. Sci., Phila., vol. 84, 1932, p. 112. "Guaymas and Paz. Dredged at Acapulco." --- Lowe, Trans. San Diego Soc. Nat. Hist., vol. 8, 1935, p. 30. "Punta Penasco, Sonora, Mexico." --- Jordan, Contrib. Dept. Geol., Stanford Univ., vol. 1, No. 4, 1936, p. 154. "Pleistocene, Magdalena Bay,"

CROCKER EXPEDITION

Magdalena Bay, loc. 27588
San Bartolome Bay, loc. 27595
Lat. 22 44 N., loc. 27582

LOWE COLLECTION

Puerto Penasco
Tiberon Island in 20 fms
Scammon Lagoon
Guaymas
La Paz
Kino Bay
Acapulco

Shell large, with a broad, slopingly shouldered body whorl and a short spire; Axial sculpture of about ten ribs rising to short spines at the shoulder angle; spiral sculpture of narrow, wide spaced cords, sometimes alternating in strength. Grant & Gale give the measurements as, Length 40 to 60, diameter, 25 to 40 mm. The color is brownish, sometimes banded.

19. CANCELLARIA (EUCLIA) COOPERI GABB

Cancellaria (Narona) *cooperi* Gabb, Proc. Calif. Ac. Sci., Vol. 3, 1865, p. 186. "San Diego" --- Tryon, Man. Conch. Vol. 7, 1885, p. 76, pl. 4, fig. 66.

Cancellaria cooperi Gabb. Williamson, Proc. U. S. Nat. Mus., vol. 15, 1892, p. 211, pl. 22, fig. 2. "San Pedro" --- Arnold, Mem. Calif. Ac. Sci., vol. 3, 1903, p. 217, pl. 7, fig. 8. "Pleistocene, San Pedro" --- Berry, Nautilus, vol. 21, 1907, p. 40. "Monterey, California" --- Grant & Gale, Mem. San Diego Soc. Nat. Hist., vol. 1, 1931, pp. 619, 620. (cites references) --- Oldroyd, Stanford Univ. Pub., Geol. Sci., vol. 2, pt. 1, 1927, p. 152, pl. 11, fig. 14 "Range; Monterey, California to Coronado Islands".

Cancellaria (Progabba) *cooperi* Gabb. Dall, Bull. U. S. Nat. Mus., No. 112, 1921, p. 83, pl. 5, figs. 3, 4. "Range; Monterey to Coronado Islands.

GROCKER EXPEDITION, 1932

LOWE COLLECTION

Near Cortez Bank, loc. 27602

Off Newport Beach

This is the largest of the west coast *Cancellariidae*. The shell is elongate, slopingly shouldered; axial sculpture of about 15 ribs, strong on the spire, becoming faint on the body whorl but rising to small, sharp spines or tubercles on the shoulder angle; spiral sculpture of fine, close spaced cords. The color is brownish with narrow, darker lines. Oldroyd gives the measurements as, longitude, 80; diameter of body whorl, 35 mm.

SUBGENUS NARONA H. & A. ADAMS

Narona, H. & A. Adams, Gen. Rec. Moll., vol. 1, 1854, p. 277. Type (by subsequent designation Cossmann (1) () *Cancellaria clavatula* Sowerby, living, west coast of America.

H. & A. Adams included a number of species under Narona. Of these Cossmann designated *C. clavatula* as the type and this seems to have been the first definite statement of a type. Dall (2) and others have considered *Cancellaria mitriformis* Sowerby to be the type and have grouped a number of the slender, mitra-like species under the name. Narona, as represented by the type, differs from all other groups in *Cancellariidae* in the presence of irregularly palced varices. The shell is rather slender, not umbilicate, the siphonal fasciole not prominent and the columellar plaits strong. As here used only the two varicose species occurring in the west coast fauna are considered to belong to the subgenus.

SUBGENUS NARONA

Axial ribs strong, about 15 appearing on the body whorl - - - - - clavatula

Axial ribs low, sharp, numerous - - - - - exopleura

(1) Cossmann, Ess. Paleo. Comp., vol. 3, 1899, p. 5

(2) Dall, Bull. Mus. Comp. Zool., vol. 43, 1908, p. 294

20. CANCELLARIA (NARONA) CLAVATULA SOWERBY

Cancellaria clavatula Sowerby, Proc. Zool. Soc., London, for 1832, p. 52. "Hab ad Panamam et Paytam" --- Conch. Ill., *Cancellaria*, 1832, sp. 11, pl. 10, fig. 12 (same locality) --- Kiener, Icon. Conch., Fam. Canaliferes, vol. 2, 1841, pp. 31, 32, pl. 5, fig. 2 (same locality) --- Lamarck, Ans. sans Vert, vol. 9, 1842, p. 416. (same locality) --- Sowerby, Thes. Conch., vol. 2, 1849, p. 445, p. 92, fig. 13; pl. 95, fig. 67. (same locality) --- C. B. Adams, Panama Shells, Panama Shells, 1852, sp. 155, pp. 133, 134. "Panama" --- Reeve, Conch. Ic. vol. 10, 1856, pl. 11, figs. 52a, 52b (? 52c) "Panama" --- Tryon, Man. Conch., vol.

7, 1885, p. 75, pl. 4, fig. 61 (Copies fig. in Reeve) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 209, "Panama to Peru" --- Olsson, Nautilus, vol. 37, 1924, p. 123. "Lobitas, Peru." --- Grant & Gale, Men. San Diego, Soc. Nat. Hist., vol. 1, 1931, pp. 615, 617, pl. 27, fig. 2. (cites references) --- Pilsbry & Lowe, Proc. Acad. Nat. Sci. Phila., vol. 84, 1932, p. 112. "Montijo Bay"

CROCKER EXPED., 1932

CROCKER-BEEBE EXPED., 1937

LOWE COLLECTION

Off Manzanatlan, loc. 27581 Guatemala, Sta. 197

Montijo Bay

Off Manzanillo, loc. 27574

Off Oaxaca, Loc. 27567

West Mexico, Lat. 22 44 N

loc. 27583

The shell is slender, brownish, blotched and banded with white, sculptured with strong, rounded axial ribs and much finer spiral cords. The varices are strong and irregularly placed. In the original description the measurements are given as, Long. 1 4/10, lat. 13/20 poll. (approximately 35 x 16 mm) The figure 52c in Reeve looks different and may not belong here.

21. CANCELLARIA (NARONA) EXOPLEURA DALL

Cancellaria (Narona) exopleura Dall, Bull. Mus. Comp. Zool., vol. 43, 1908, p. 294.

"Panama Bay in 47 fms., also at Payta, Peru" --- Proc. U. S. Nat. Mus., vol. 37, 1909, p. 209. "Panama to Peru" --- Zetek, Los Moluscos de la Republica de Panama, 1917, p. 526.

CROCKER-BEEBE EXPED., 1937

Guatemala, Sta. 197

Port Culebra, Sta. 206

This unfigured species is said to be nearest to *C. clavatula* Sowerby, the last whorl with two or three prominent varices. The axial ribs are more numerous, about 14 on the antepenultimate whorl, and are lower and sharper. Also the whorls are more evenly rounded. The measurements of the type are given as, Length of shell, 26, max. lat. 12 mm.

GENUS BIVETOPSIA JOUSSEAME

Bivetopsia Jousseame, La Naturaliste, ser. 2, year 9, 1887, p. 193. Type (by subsequent designation, Cossman (1) () Cancellaria chrysostoma Sowerby, living, west coast of America.

The group, here placed in a separate genus with *C. chrysostoma* Sowerby as the type, is quite distinct in the west coast fauna. They are characterized by a narrow, open, deep umbilicus bounded by a distinct siphonal fasciole. All are subglobose to broadly turritid shells with well developed sculpture and are confined to tropical to subtropical waters. As in typical Cancellaria the columella has two strong plaits and ends in a plait like fold.

(1) Ess. Paleo. Comp., vol. 3, 1899, p. 8.

KEY TO THE GENUS BIVETOPSIS

Axial ribs strong, not spinous

' Shell subglobose

' ' Spiral cords broad, strong

Length 37, breadth 20 mm - - - - - chrysostoma

' ' Spiral cords fine, alternating in strength

Length 27, breadth 17 mm - - - - - haemastoma

KEY TO THE GENUS BIVETOPSIA CONT'D

- ' ' Spiral sculpture obsolete
Length 20, breadth 15 mm - - - - - brevis
- ' Shell Broadly turritid
Length 20 mm - - - - - funiculata
- Axial ribs spinous at the intersection with the spiral cords
- ' Intersections forming raised, angular points
Length 28, breadth 20 mm - - - - - pulchra
- ' Shoulder of whorls with long, guttered spines
Length 35, breadth 20 mm - - - - - centrota
- Axial ribs indistinct or obsolete
- ' Spiral sculpture of deep grooves
Length - - - - - cumingiana
- ' Shoulder and periphery with spiral rows of nodes
- ' ' Nodes on the shoulder axially elongate
Length 35, breadth 27 mm - - - - - tuberculata
- ' ' Nodes at the shoulder spirally elongate
Length 30, breadth 25 mm - - - - - bullata

22. BIVETOPSIA CHRYSOSTOMA (SOWERBY)

Cancellaria chrysostoma Sowerby, Proc. Zool. Soc., London, for 1832, pp. 54, 55.
 "Hab ad Panaman et Santam Elenum" --- Conch. Ill., *Cancellaria*, 1833, sp. 42, pl. 13, fig. 39. "Panama and Santa Elena" --- Kiener, Icon. Conch., Canaliferes, vol. 2, 1841, pp. 18, 19, pl. 8, fig. 2. "Panama and Peru" --- Lamarck, Ans. sans Vert., vol. 9, 1843, p. 414. "Hab. Panama et Santo Helena" --- Sowerby, Thes. Conch., vol. 2, 1849, p. 451, pl. 94, fig. 39. "Panama and Santa Elena" --- Reeve, Conch. Ic., vol. 10, 1856, pl. 7, figs. 31a, 31b. (same localities) --- Tryon, Man. Conch., vol. 7, 1885, p. 71, pl. 3, fig. 38. (copies fig. in Thes. Conch.) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 209. "Panama to Peru". --- Zetek, Los Moluscos de la Republica de Panama, 1917, p. 526. "Panama" Olsson, Nautilus, vol. 37, 1824, p. 123. "Locally common, Nigrites, Lobitos, Manacora, Peru; Salinas, Ecuador."

This is a subglobose shell, sculptured with broad axial ribs and thick spiral ridges. The exterior is bluish white, dotted or lined with chestnut and the interior of the aperture is bright orange red. In the original description the measurements are given as, Long. 1 1/10, lat. 17/20 poll. (approximately 37 x 20 mm.)

23. BIVETOPSIA HAEMASTOMA (SOWERBY)

Cancellaria haemastoma Sowerby, Proc. Zool. Soc., London, for 1832, p. 54. "Hab ad insulas Galapagos" --- Conch. Ill., *Cancellaria*, sp. 44, 1834, Pl. 13, fig. 40. "Galapagos Islands, 10 fms." --- Thes. Conch., vol. 2, 1849, p. 452, pl. 3, figs. 43, 44, 45. (same locality) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 7, figs. 30a, 30b. (same locality) --- Tryon, Man. Conch. vol. 7, 1885, pl. 3, figs. 37, 39. (Copies fig. in Thes. Conch.) --- Sterns, Proc. U. S. Nat. Mus., vol. 16, 1893, p. 442. (refers to Carpenter's record from the Galapagos Islands) --- Tomlin, Jr. of Conch., London, vol. 18, 1927, p. 157. "Alve and dead on shore, Tagus Cove, Albemarle Island."

HANCOCK EXPED.

LOWE COLLECTION

Hood Island, Galapagos Islands

Hood Island, Galapagos Islands

This shell is quite similar in color and axial sculpture to *C. chrysostoma*

Sowerby but with the whorls more tabulated and the spiral sculpture much finer. In the original description the measurements are given as, Long. 1 1/10, lat. 7/10 poll. (approximately 27 x 17 mm.)

24. BIVETOPSIA BREVIS (SOWERBY)

Cancellaria brevis Sowerby, Proc. Zool. Soc., London, for 1832, p. 52. "Hab. ad oras Americae Meridionalis et Centralis (Pureto Portero and Santa Elena).--- Conch. Ill., *Cancellaria*, 1832, sp. 35, pl. 12, fig. 32. "Puerto Portero and Santa Elena." --- Kiener, Fam. Canaliferos, 1841, p. 14, pl. 7, fig. 2. "Patagonia" --- Sowerby, Thes. Conch., vol. 2, 1849, p. 457, pl. 93, fig. 21. Puerto Potero and Santa Elena". --- Reeve, Conch. Ic., vol. 10, 1856, pl. 9, fig. 40a, 40b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, pl. 5, fig. 82. (Copies fig. in Thes. Conch) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 209. "Mazatlan to Guayaquil." --- Pilsbry & Lowe, Proc. Ac. Nat. Sci., Phila. vol. 84, 1932, p. 112. "San Juan del Sur; "Montijo Bay."

LOWE COLLECTION

San Juan del Sur
Montijo

The shell is subglobose with a rather large umbilicus, sculptured with rude axial ribs and fine or obsolete spiral striae. The whorls are rather narrowly, concavely shouldered and the columella has 2 distinct plaits and a very faint terminal plait. The measurements in the original description as; Long. 8/10, lat. 6/10 poll. (approximately 20 x 15 mm)

25. BIVETOPSIA FUNICULATA (HINDS)

Cancellaria funiculata Hinds, Proc. Zool. Soc., London, for 1843, p. 48, "A single specimen from 7 fms. Bay of Magdalena" --- Zool. Voy. Sulphur, Mollusca, Vol. 2, 1844, p. 43, Pl. 12, figs. 5, 6. (same locality) --- Sowerby, Thes. Conch., vol. 2, 1849, pp. 454, 455, pl. 96, figs. 96, 97. (same locality) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 15, figs. 68a, 68b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, p. 83, pl. 7, fig. 21. (copies fig. in Hinds) --- Tomlin, Jr. of Conch., London, vol. 18, 1927. "Several dredged at Gorgona" --- Pilsbry & Lowe, Proc. Acad. Nat. Sci., Philadelphia, vol. 84, 1932, p. 112. "Dredged at Guayas; Mazanillo"

CROCKER EXPEDITION

West Mexico, Lat. 16 39 N.
Loc. 27371

BEEBE-CROCKER EXPED. 1936

Gorda Bank, Gulf of Cal.
Sta. 150
Manzanillo, Sta. 184

LOWE COLLECTION

Guaymas in 20 fms
Manzanillo in 20 fms
Punta Penasco

BEEBE-CROCKER EXPED. 1937

Hannibal Bank, Sta. 224

This is a rather broadly turritid shell with strong, rounded axial ribs and smaller spiral cords alternating in size. In the original description the color is given as transparent white, faintly tinged with orange. The measurement is given as, Axis 8 lin. (approximately 16 mm).

Reeve gives as a synonym., *C. lyrata* Adams & Reeve. (Voy. Samarang, 1850, p. 42, pl. 10, fig. 4) but it seems to be a distinct species from the "China Seas".

(This will be continued in the next issue
of the Minutes.)

MINUTES OF THE SOUTHERN CALIFORNIA CONCHOLOGICAL CLUB
Feb. 2nd, 1954

The meeting was called to order at 7:45 PM by Miss Ruth Coats, president, who welcomed 55 members and guests.

A correction in the minutes of the January meeting was made. The correct date of the AMUPD meeting to be held at U.S.C., will be June 18th and 19th instead of June 17th to 19th as previously published.

Miss Coats announced the following committee appointments:

George Kanakoff: Nomenclature
Crawford Cates: Fieldtrips
John Fitch: Programs
Rose Burch: Membership & Hostess
Ruth Coats: Educational

At this time, Mr. Fitch was called on to introduce the speaker of the evening: Mr. Conrad Limbaugh, diving instructor for Scripps Institute of Oceanography at La Jolla, California.

An ichthyologist by profession, he is regarded as the best free-diving instructor on this coast. Mr. Limbaugh, in determining the effect of pressure on the body and the decrease in mental efficiency, has attained depths up to 300 feet.

Mr. Limbaugh made several observations as to habitat of marine specimens he brought with him as well as discussing free-diving apparatus in relation to collecting shells.

One interesting fact was that Haliotis rufescens wallalensis is to be found at La Jolla. This species was taken from the undersides of flat rocks at a depth of 80 feet. This is, probably, an extension of range.

Following this discussion, Mr. Limbaugh showed color movies taken underwater. A large part of this film was taken at the Coronado Islands and Guadalupe Island.

Fish, seals and sea elephants pre-dominated as actors, while divers took bit-parts. The settings, fashioned by nature uncontaminated, were very beautiful.

One inhabitant, lovely to look at but painful to touch, was a jellyfish. This specimen was said to be 4 to 5 feet across the umbrella and 20 feet long.

Mr. Limbaugh was able to testify as to the ability of this species to inflict quite painful stings to anyone unlucky enough as to get within range.

The meeting was adjourned at 10:00 PM by Miss Ruth Coats to allow the group to examine the specimens brought in by Mr. Limbaugh.

D. L. Burford
Secretary

PUBLICATIONS RECEIVED

Proceedings of the Malacological Society of London Vol. 30, parts 4 and 5 31st Dec., 1953

The Mode of Life and the structure and functioning of the reproductive ducts of Bithynia tentaculata (L.) by Molly M. Lilly

* A very thorough anatomical study

Fossil and Recent English Species of Vallonia by B.W. Sparks

English Eocene Siphonalia and Pseudoneptunia by the late Arthur Wrangley.

Systematic review of the Volutid genus Amoria by N.H. Ludbrook

*** This is a thorough and valuable contribution 5 full page plates illustrating some 38 figures. The synonymy is very complete and it is certain that all who are interested in the Volutidae will wish to get a copy of this paper. There has been a great deal of confusion regarding this group of the volutes and Dr. Ludbrook's revision is proving to be of great value to us in working with these species. We have been changing labels right and left and seeing the distinctions clearly. It is sincerely hoped that the author will publish revisions of other genera in this family. The price of this issue is stated on the cover as 25s which is about \$3.50 with perhaps some postage of which we are not sure but if interested write the writer John Burch and we will see about getting additional copies. In my opinion this paper will be invaluable though for this genus.

Notes on the snails of the North-East Tanganyika Territory by B. Verdcourt

Nuova revisione delle conchiglie marine di Sicilia by Dott. Ing. Ottavio Pròbolo Memoria VI -Estratto da Atti della Accademia Gioenia di Scienze Naturali in Catania Serie Sesta - Vol. IX 1952-53

Catania 1953 ** This is a continuation of the excellent work by the author on the fauna of Sicily. This issue is devoted to the genera Cingula and Alvania.

Formed Elements of the Blood of Certain Fresh-Water Mussels by Dee Saunders Dundee- Reprint from Transactions of the American Microscopical Society Vol. LXXII, No.3, July 1953

A new species of Lundbladina

Revista de la Sociedad Malacologica " Carlos De La Torre" Vol. 9 Enero 10, 1954 Num 2.

A New Promenetus (Planorbidae) from Panama by D.W. Taylor.

This is an interesting addition to the fauna of Central America- Promenetus minutus . As the author suggests this may well be the smallest known planorbid. Ht. 0.52.

Nuevos Moluscos Cubanos De Los Generos Cerion y Chondropoma por Alfredo de la Torre.

Description De Nuevos Especies De Moluscos Terrestres Cubanos por C Carlos G. Aguayo y Miguel L. Jaume

Nuevo Helicinido De La Provincia De Matanzas por C.G. Aguayo y Alfredo de la Torre

** This excellent periodical may be obtained by writing Dr. M.L. Jaume, Apartado 2634, Habana, Cuba

Notas Sobre El Genero Emoda (Mollusca:Helicinidae) por C.G. Aguayo y M.L. Jaume- Torreia, Publicacion ocasional del Museo Poey, Univ. De La Habana, Cuba.

Circulares del Museo y Bibliotheca de Malacologia De La Habana

These mimeographed papers contain a wealth of valuable information as well as many entertaining items. An example of really valuable contributions is the continuing work- " Los Moluscos De Cuba" en la Historia, Fisica, Politica y Natural De La Isla De Cuba por Alcides d'Orbigny- (Reproduccion de M.L. Jaume) "

" Rafinesque, The Bats and the Cremona" by Edward A. Muschamp is an interesting and amusing paper about the relations of Audubon and Rafinesque.

Dec. 1953- contains - a continuation of the Orbigny work-

" Los Origenes de la Fauna Cubana" por Carlos G. Aguayo

" The Phyletic Development of the Pulmonata" after Dr. Johannes Thiele translated from the German by Morris K. Jacobson.

" Frederick Price Marrat (a Liverpool Conchologist)" by W.K. Ford
Preservation and Dissection of Veronicellidae" by Dr. Lothar Forcart.

There are many other interesting articles including a review of current publications, personalia re the activities of active workers

This publication may be had by writing Editor: M.L. Jaume, 13 No. 351, Vedado, Habana, Cuba Price \$1.50 per 100 pages.

Puget Sound Oyster Bulletin- Series XII: No.4 Dec. 16, 1953. State Shellfish Laboratory, Quilcene, Washington. 12 pages and 5 charts.

These bulletins give a detailed report on the oyster industry of Puget Sound.

Hawaiian Shell News Vol. II nos. 3 (Jan. 1954) and No.4 (Feb. 1954)

This is the journal of this very active organization " The Hawaiian Malacological Society"- President Mrs. C.D. Rae, Recording Secretary Mr. Guy A. Murray, Treasurer Mr. John Obata, Vice-President Mr. Frank P. Farm Jr., Corresponding Secretary Mr. Spencer W. Tinker.

These contain - an obituary of the late Albert Wray Harris and a number of interesting papers on how and where to find certain species in Hawaii, information that should be invaluable to one wishing to collect there.

News of conchologists and conchological publications make these papers of great interest to all interested in shells.

The series of articles by Karl W/ Greene appearing in the Honolulu Star Bulletin should be accumulated and published somewhere. Many of them are really fine. Mr. Greene's specialty is Conus and he should be recognized as one of the best students of this group.

Letter from Professor Roy L. Morrison of San Diego- " Dear J.Q. : I note in your bulletin list 219 regarding Pyramidella adamsi Carp. of Mission Bay as being scarce- quite true. I last collected them in 1943. Since then I have searched dilligently but no soap. Since the dredging, the area where I found them has been covered slightly with dredged sand, not too heavy but enough to change the habitat. Am working on a comparative survey of the new Mission Bay shore line and the old bay. Hope to get it out this spring.

Have collected Pedipes unisculatus alive in the rock shelf between La Jolla and Spidthrft Beach Club several years ago. Haven't been over that area for a long time.

MINUTES 137

MARCH-APRIL 1954

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA

The Annual Report of the American Malacological Union and American Malacological Union, Pacific Division for the year 1953 is at hand.

Our national Treasurer-Secretary, Mrs. Margaret C. Teskey must receive the sincere regard of all business men in our organization. The annual dues are but a mere \$1.00 and the membership cannot exceed around 500. There are obviously other expenses to be taken from this meager fund.

A beautifully printed booklet of 51 pages plus heavy covers, one plate, neatly stapled, and on fine paper is a reasonable puzzle to some of us who have paid substantially more for substantially less recently. Some of us have looked hoping to note the name and address of the printer.

The two photographs of the members in attendance at the two meetings will cause a bit of wonder on the part of the AMUPD members who would naturally expect five times as many for a tea. However, the abstracts of the papers given remind us all that mere numbers in attendance are not a certain guide to the value of the meeting.

It is obvious that the secretary has been obliged to accept the abstracts as given her. This writer must admit that some of them have succeeded only in awakening a slight interest in just what the author really did have to say. In glancing over to some of the really excellent scientific papers I had the privilege to hear at our PD meeting, it is easy to understand how slight the part of a 3/4 hour talk, illustrated by slides or motion pictures, plus personal explanations of the author, could be fairly given in a few lines of abstract.

However, the bulletin is of great interest including the affairs of the member societies and the list of current members.

The A.M. Strong "A Review of the Eastern Pacific Species of the Molluscan Family Cancellariidae" is here continued. This installment will be followed by another until the entire paper is completed:

26. BIVETOPSIA PULCHRA (SOWERBY)

Cancellaria pulchra Sowerby, Proc.Zool.Soc., London, for 1832, p. 50. "Hab ad littora Sanctae Elenae" --- Conch. Ill., Cancellaria, 1834, sp. 39, pl. 13, fig. 37. "Santa Elena, 9 to 10 fms." --- Thes. Conch., vol. 2, 1849, p. 451, pl. 94, fig. 41 (same locality) --- C.B. Adams, Panama Shells, 1852, sp. 159, pp. 135, 136. "Panama. Two specimens were obtained." --- Reeve, Conch. Ic., vol. 10, 1856, pl. 8, figs. 38a, 38b. "Santa Elena" --- Tryon, Man. Conch., vol. 7, 1885, pl. 71, pl. 3, fig. 36. (copies fig. in Thes. Conch.)

Crocker Exped.

Crocker-Beebe Exped....1937

Off. Oaxaca, Mexico, loc. 27567-9

Port Guatulco, Sta. 195

Port Parker, Sta. 203

Gorgona Island

This is a globose shell sculptured with sharp axial ribs and spiral cords which rise to short, sharp spines at the intersections. The color is whitish, banded with chestnut brown. In the original description the measurements are given as, Long. 1 1/10, lat. 8/10 poll. (approximately 28 x 20 mm.)

27. BIVETOPSIA CENTROTA (DALL)

Cancellaria centrota Dall, Proc. U.S. Nat. Mus., vol. 18, 1896, p. 13. "near Cocos Island, in 66 fms."

Cancellaria (Merica) centrota Dall, Bull. Mus. Comp. Zool., vol. 43, 1908, p. 295, pl. 1, fig. 8 (same locality)

Crocker-Beebe Exped.

Gorda Bank, Gulf of Calif. Sta. 150

This shell is more slender than the other species in the genus. Both axial ribs and spiral cords are sharp with the cord at the shoulder the strongest, with long, guttered spines at the intersection with the axial ribs. In the description it is stated that the shell is ashy or pinkish white and the measurements are given as, Height of shell 35, width of shell, exclusive of the spines, 20 mm.

28. BIVETOPSIA CUMMINGIANA (PETIT)

Cancellaria cumingiana Petit, Magasin de Zool. (2) vol. 4, 1844, pl. 112. (no locality given) --- Sowerby, Thes. Conch., vol. 2, 1849, p. 440, pl. 93, fig. 20. "Payta" --- Reeve, Conch. Ic., vol. 10, 1856, pl. 1, fig. 1. "Hab. unknown" --- Petit, Jr. de Conch., Paris, vol. 11, 1863, p. 62. "Payta, Peru" --- Tryon, Man. Conch., vol. 7, 1885, p. 68, vol. 1, fig. 12. (copies fig. in Reeve) --- Ollson, Nautilus, vol. 37, 1924, p. 123. "Often common on Indian graves; living at Lobitas and Mancora, Peru"

The sculpture of this species is very distinct, consisting of deep, narrow spiral grooves with wider interspaces, and sometimes low, broad, axial swellings. The typical form is rather turbate with a low spire. The measurements are given as: Variety subobtusata Petit, Jr. de Conch., Paris, vol. 11, 1863, p. 62, pl. 2, fig. 9. "Payta, Peru." --- Tryon, Man. Conch., vol. 7, 1885, pl. 2, fig. 13. (Copies fig. in Jr. de Conch.)

This form is said to be more globose than the typical and lacks the axial swellings. The measurements are given as: length, 38; diameter, 29 mm. It is said by Petit to be intermediate between the typical form and *Cancellaria obtusa* Deshayes (Enc. Meth. Vers., vol. 2, 1830, p. 187). Tryon lays of the latter (Man. Conch., vol. 7, 1885, p. 68, pl. 2, fig. 14) "a unique specimen in the Cuming collection, hab. unknown", and the figure shows a very similar shell. Rous (Nautilus, vol. 21, no. 8, Jan. 1908, p. 105. Cited on title page as vol. 22, no. 8) records a single specimen from Panama which he identifies as *Cancellaria obtusa* Desh. and states that this fixes the habitat of Deshayes' species. This specimen could easily have been a specimen of *cumingiana* although the species has not been reported as far north as Panama.

29. BIVETOPSIA TUBERCULOSA (SOWERBY)

Cancellaria tuberculosa Sowerby, Proc. Zool. Soc., London, for 1832, p. 51. "Hab ad Littora Americae Meriadionalis (Iquiqui)" --- Conch. Ill. Cancellaria sp. 33, 1833, pl. 13, fig. 36. "Iquiqui" --- Kiener, Icon. Conch., Fam. Canaliferes, vol. 2, 1841, pp. 39, 40, pl. 1, fig. 2; pl. 9, fig. 1. "Peru" --- Lamarck, Ans. sans Vert., vol. 9, 1843, pp. 413, 414. "Hab Amerique Meridionale" --- Tryon, Man. Conch., vol. 7, 1885, p. 78, pl. 5, figs. 66, 67. (copies fig. 66 from Thes. Conch. and fig. 67 from Kiener) --- Dall, Proc. U.S. Nat. Mus., vol. 37, 1909, p. 210. "Calle, Peru, to Majillones, Chile"

Cancellaria tuberculata Sowerby, Thes. Conch., vol. 2, 1849, p. 457, pl. 94, fig. 2 "Iquiqui"

This white shell is narrowly, concavely shouldered, with blunt, axially elongate tubercles on the shoulder angle and a second row of tubercles on the periphery. In the original description the measurements are given as, Long. 1 4/10, lat. 1/1/10 poll. (approximately 35 x 27 mm.)

30. BIVETOPSIA BULLATA (SOWERBY)

Cancellaria bullata Sowerby, Proc. Zool. Soc., London, for 1832, p. 51. "Hab ad littora Americae Meridionalis et Centralis, Payta and Gulf of Nicoiya, 12 fms." --- Conch. Ill., Cancellaria, p. 6, sp. 37, p. 8, sp. 35, 1834, pl. 12, fig. 35. (Same localities) --- Thes. Conch., vol. 2, 1849, p. 457, pl. 94, fig. 56. "Gulf of Nicoiya". --- Reeve, Conch. Ic., vol. 10, 1856, pl. 2, figs. 5a, 5b. "Gulf of Nicoiya." --- Tryon, Man. Conch., vol. 7, 1885, pl. 5, fig. 78 (copies fig. in Thes. Conch.) --- Dall, Proc. U.S. Nat. Mus., vol. 37, 1909, p. 209. "Panama to Iquiqui." --- Zetek, Los Moluscos de la Republica Panama 1917, p. 526, "Panama." --- Strong, Hanna & Hertlein, Proc. Calif. Acad. Sci., 4th ser., vol. 21, No. 10, 1933, p. 119, pl. 5, fig. 7 "Dredged off Acapulco"

Crocker Expedition
Off Acapulco, loc. 27527

Crocker-Beebe Expedition 1936.
Off Cerros Island, Sta. 126

Crocker-Beebe Expedition 1937.
Costa Rica, Sta. 214

This species is quite similar to *C. tuberculosa* Sowerby, but is a lighter, more delicate shell with the nodules smaller and spirally elongate. The color is brownish. In the original description the measurements are given as, Long. 1 2/10, lat. 1 poll. (approximately 30 x 25 mm.)

Genus TRIGONOSTOMA Blainville

Trigona Perry, 1811 (not Megerle, 1811, nor Jurine, 1807)(Dall, Proc. U.S. Nat. Mus.,

vol. 26, p. 349, under Tivela Link, 1807, lists as a synonym Trigona Megerle, 1811, not Jurina, 1807, a Hymenoptera.) Conchology, expl. to pl. 81, fig. 1, 2. (title page dated Jan. 1, 1811. Type (by monotypy) Trigona pellucida Perry. "South Seas"

Trigonostoma Blainville, An. de Conch., 1826, p. 652. Type (by monotypy). Delphinula trigonostoma Dosh. in Lam., figured in Reeve, Conch Ic. Cancellaria, vol. 10, pl. 11, fig. 51. "Ceylon, Kiener"

Trigona pellucida Perry is very similar to, if not identical with Delphinula trigonostoma Lamarck and both come from the same general locality. The use of Blainville's name may be open to question as it is considered by some to be a vernacular name. However it has been used by many writers on Conchology & Paleontology.

The type is a loosely coiled shell with broadly, concavely, tabulated whorls, forming a triangular aperture. The siphonal fasciole is represented only by a ridge bordering the wide, funnel shaped umbilicus and the columella has two low plaits and an obscure basal fold.

31. TRIGONOSTOMA GONIOSTOMA SOWERBY

Cancellaria goniostoma Sowerby, Proc. Zool. Soc., London, for 1832, p. 51, "Hab ad littora Americus Centralis (Conchagua, San Salvador, 8 fms., 1 sp.) --- Conch. Ill., Cancellaria, 1833, sp. 47, pl. 13, fig. 43. (Same locality) --- Thes. Conch., vol. 2, 1849, p. 457, pl. 94, fig. 40. (same locality) --- C. B. Adams, Panama Shells, 1852, sp. 157, pp. 134, 135. "Taboga, 1 specimen, 8 fms." --- Reeve, Conch. Ic., vol. 10, 1856, pl. 7, fig. 32a, 32b. "Conchagua and St. Salvad." --- Carpenter, Mazatlan Catalogue, 1856, sp. 446, pp. 380, 381. "Mazatlan" --- Tryon, Man. Conch., vol. 7, 1885, p. 78, pl. 5, figs. 80, 81. (copies fig. 80 from Thes. Conch. and fig. 81 from Reeve) --- Pilsbry & Lowe, Proc. Acad. Nat. Sci. Phila., vol. 84, 1932, p. 112. "Mazatlan"

Cancellaria pygmaea C. B. Adams, Panama Shells, sp. 160, p. 136 "Taboga, 1 specimen. Carpenter, Supl. Report, British Assoc., for 1856, p. 550

Crocker-Beebe Exped., 1937

Lowe Collection
Mazatlan; Tepoca Bay; Concepcion Bay.

This is one of the comparatively few west coast shells which are evidently closely related to those of the western Pacific fauna, Carpenter lists as possible synonyms C. costata Gray and C. rigida Sowerby from Gambia and also C. bicolor Hinds from Straits of Macassar. Carpenter states in regard to C. pygmaea C.B. Adams that it simply is a young specimen of C. goniostoma Sowerby.

The west coast species is quite similar to the type of the genus with the concavely tabulated whorls, wide umbilicus and triangular aperture. It is sculptured with strong axial ribs and finer spiral cords, more or less nodulous at the intersections. The colors vary from yellowish to brown, either unicolor or banded. In the original description the measurements are given as, Long 1 1/10, lat. 8/10 poll. (approx. 28 x 20 mm

Genus MASSYLA H. & A. Adams

Massyla H. & A. Adams. Gen. Rec. Moll., vol. 1, 1854, p. 278. Type (by monotypy) Cancellaria corrugata Hinds, living, west coast of America

The species in this genus differ from those in Cancellaria and Bivetopsia in that the siphonal fasciole and stromboid notch is faint or absent and the plaits on the columella are fine and very oblique. The lower end of the columella in some of the species is cut off obliquely with a very faint or no terminal plait.

Subgenus Massyla, s.s.

In the typical subgenus the shells are slender and have a more or less well defined canal. The enamel of the inner lip over the body of the shell is narrow or absent, and the umbilicus is covered or reduced to a narrow chink. With the exception of the type all the west coast species placed in the subgenus are known to range into cool waters, Peru and Chile on the south and from California to Alaska on the north.

Key to the west coast species in the genus Massyla s.s.

Adult shell over 10 mm in length

Sculpture decussated with axial ribs and spiral cords

Whorls rounded or slightly shouldered

Spiral cords numerous, slightly nodulous

Length 12 mm ----- *corrugata*

Spiral cords numerous, flat topped

Length 43, diameter 21 mm ----- *crawfordiana*

Spiral cords on spire 3, on last whorl 6

----- *philippi*

Whorls strongly shouldered

Aperture ending in a distinct canal

Length 45, diameter 17.5 mm ----- *mitriformis*

Aperture ending in a sharp notch

Length 20, diameter 9 mm ----- *uniplicata*

Sculpture of strong spiral cords & short, nodulous axial ribs

Length 20, diameter 7.5 mm ----- *unalaskensis*

Sculpture of spiral cords and faint axial riblets

Length 20, diameter 9 mm ----- *circumcincta*

Sculpture of spiral cords and fine lines of growth

Length 17, diameter 8.5 mm ----- *modesta*

Adult shell less than 10 mm in length

Sculpture decussated with axial ribs and spiral cords

Axial ribs 12, narrow, nearly vertical

Length 7, diameter 4.5 mm ----- *rhyssa*

Axial ribs 10, strong, rounded

Length 9, diameter 4 mm ----- *gracilis*

Sculpture of spiral cords and faint axial riblets

Length 9, diameter 4.5 mm ----- *woodworthi*

32. MASSYLA (MASSYLA) CORRUGATA (Hinds)

Cancellaria corrugata Hinds, Proc. Zool. Soc., London, for 1843. p. 48. "Bay of Guayaquil, 7 fms." --- Zool. voy. Sulphur, Moll., vol. 2, 1844, p. 42, pl. 12, figs. 1, 2. (same locality) --- Sowerby, Thes. Conch., vol. 2, 1849, p. 448, pl. 96, figs. 92, 93. (same locality) --- Reeve, Conch. Ic., vol. 10, 1856, pl. 15, figs. 72a, 72b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, p. 75, pl. 4, fig. 57. (Copies fig. in Reeve) --- Dall, Proc. U.S. Nat. Mus., vol. 37, 1909, p. 209. (same locality)

Shell oblong, somewhat pyriform, sculptured with low, wrinkle-like axial ribs crossed by numerous, low, spiral cords. The columella has two oblique plaits but no terminal plait. The color is said to be olive brown and in the original description the measurement is given as: Axis 8 lin. (approximately 16 mm.)

The only record of this species seems to be that of the type collected by Hinds at Guayaquil.

32. MASSYLA (MASSYLA) CRAWFORDIANA (Dall)

- Cancellaria crawfordiana Dall, Proc. U. S. Nat. Mus., vol. 14, 1891, p. 182, pl. 6, Fig. 1, "Drakes Bay, near San Francisco, California," --- Packard, Univ. Calif. Publ., Zool., vol. 14, 1913, p. 141, pl. 39, fig. 9a, 9b, "Off San Francisco."
Cancellaria (Progabba) crawfordiana Ball, Bull. U. S. Nat. Mus., No. 112, 1921, p. 84. "Bodega Bay to San Diego, California." --- Oldroyd, Stanford Univ. Publ. Geol. Sci., vol. 2, pt. 1, 1927, pp. 153, 154. "Range, Bodega Bay to San Diego."
Cancellaria (Cancellaria) crawfordiana Dall, Grant & Gale, Mem. San Diego Soc. Nat. Hist., vol. 1, 1931, pp. 614, 615. (Cites references and fossil records)

Crocker Expedition: Near Cortez Bank, loc. 27602

Lowe Collection: Off San Pedro, 35 fms.; Drakes Bay; Monterey

Shell slender, with moderately rounded whorls, which, when fresh, are covered with a rather coarse epidermis. The sculpture consists of from 15 to 20 axial ribs crossed by numerous flat topped spiral cords. The columella has two slender plaits and an obscure terminal plait. In the original description the color is given as pale brown and the measurements as: Long. of shell 43, Max. diameter 21 mm.

Dall (Proc. Biol. Soc. Wash., vol. 31, 1918, p. 138; Proc. U. S. Nat. Mus., vol. 56, 1919, p. 306) makes this species the type of a section, stating, "The hirsute species like C. crawfordiana Ball, may be regarded as forming a section Crawfordiana." However he does not list any other species in this section.

33. MASSYLA PHILIPPII (Cossman)

- Cancellaria parva Philippi, Atacama Reise, 1840, p. 187, pl. 7, fig. 18. "Atacama, Chile." --- Jr. de Conch., vol. 11, 1863, p. 67. (Same locality) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 210. "Paposa, Chile"
Cancellaria philippii Cossman, Ess. Palo. Comp., vol. 3, 1899, p. 30. (new name for C. parva Philippi, not Lea, 1833) (Lea, Contrib. to Geol., 1833, p. 142).

This species is described as shell oblong fusiform, with longitudinal costae and transverse cingulis, granulous at the intersections, cingula on upper whorls three, on last whorl six; subimperfurate, columella biplicate. The measurements are given as:

34. MASSYLA (MASSYLA) MITRIFORMIS (Sowerby)

- Cancellaria mitriformis Sowerby, Proc. Zool. Soc., London, for 1832, p. 51. "Hab. ad Panama." --- Conch. Ill., Cancellaria, 1932, sp. 13, pl. 10, fig. 14 (same locality) --- Kiener, Icon. Conch., Fam. Canaliferae, vol. 2, 1841, pp. 27, 28, pl. 9, fig. 3. (same locality) --- Sowerby, Thes. Conch., vol. 2, 1849, p. 445, pl. 93, fig. 24. (same locality) --- C.B. Adams, Panama Shells, 1952, p. 135, sp. 158. (same locality) --- Reeve, Conch. Ic. vol. 10, 1856, pl. 11, figs. 49a, 49b. (same locality) --- Tryon, Man. Conch., vol. 7, 1885, pl. 4, figs. 62, 63. (copies fig. in Thes. Conch.) --- Dall, Proc. U. S. Nat. Mus., vol. 37, 1909, p. 210. "Panama to Peru" --- Zetek, Los Moluscos de la Republica Panama, 1917, p. 526, "Panama"
Cancellaria sowerbyi Crosse, Jr. de Conch., Paris, vol. 9, 1861, p. 242, new name for Cancellaria mitriformis Sowerby, 1832, not Cancellaria mitraeformis Brocchi, 1831

(No new name needed)

Continued in Minutes 138

Minutes of the Conchological Club of Southern California

March 2, 1954

Mr. John Fitch, in the absence of Miss Ruth Coats, called the meeting to order at 7:45 PM and welcomed an attendance of fifty-five persons.

Among the guests were Mrs. Arnold, president of the Long Beach Shell Club and Dr. and Mrs. Burch. Dr. Burch, recently returned from West Africa, is a past president of the Conchological Club of Southern California.

Miss Bessie Faulkner, secretary, announced a paid membership of forty-five as of this date.

Mr. Crawford N. Cates, fieldtrip chairman, announced a -0.5 tide Sunday, March 14th, at 12:49 PM and in lieu of a planned group outing, urged all interested to gather at White's Point.

Mr. Cates informed us that the Thurlows have had good collecting at Guaymas and are headed further south for additional material.

Mr. Emory Chace commented on a new publication - "Recent Mollusca of Canada". This catalogue is published by the National Museum of Canada and sells for \$2.50.

After a short intermission, Mr. Fitch introduced the speaker of the evening, Dr. Trom Soot-Ryen of the Museum at Tromso, Norway.

Dr. Soot-Ryen gave a very interesting and comprehensive review of the Mytilidae of the West Coast of North and South America.

An interesting fact was that the fauna of our coast is much older than that of Norway. The fauna of Norway dates from the Ice Age and is comparatively new.

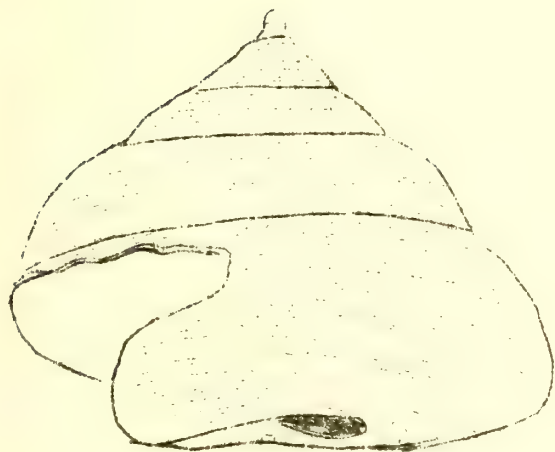
Methods used in identifying specimens consisted of shell characteristics as well as the use of gross animal examination. The variation in animals is slight but obvious to one who has studied them.

A "Preliminary List of West American Mytilidae" by Dr. Trom Soot-Ryen was given to those in attendance. This list should prove invaluable to serious collectors of this family.

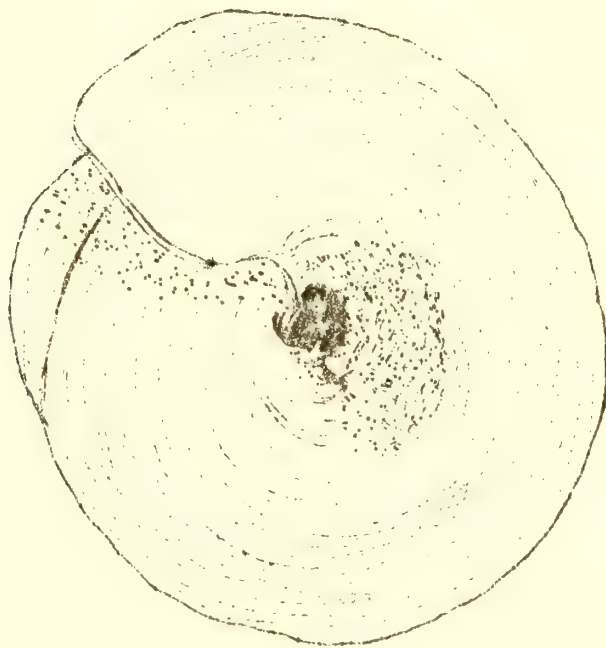
The meeting was adjourned at 9:30 PM to allow the examination of specimens brought by Dr. Soot-Ryen. One very interesting specimen was an example of a Japanese species taken at San Francisco Bay. This is the only known record of this species on this coast.

D. L. Burford, Secretary

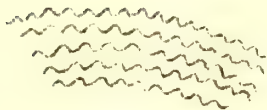
PLEUROTOMARIA (PEROTROCHUS) ADANSONIANA



Natural size



x 1 1/4



Sculpture enlarged

Two species of *Pleurotomaria* have been described from the West Indies. These are *Perotrochus quoyanus*, Fischer & Bernardi, and *Entemnotrochus adansonianus*, Crosse & Fischer. The latter is the rarer of the two shells. It is also the larger and is umbilicated. There is a single specimen in the National Museum and Dr. Rehder thinks perhaps there are one or two others in American collections, with perhaps six in all other collections in the world. The National Museum has four specimens of *quoyanus* but as far as known there are no perfect specimens of either shell. The first known to have been dredged were taken by the McGintys off Key West during the past summer but it was not perfect, being like all others, a dead shell and wave-worn.

In a lot of shells I recently received from one of my collectors in the West Indies, there was a specimen of *E. adansonianus* which while not perfect, is one of the best, if not the best, known specimen of this exceedingly rare species. The shell is two inches in diameter by two inches in height. The dorsal portion is ochreous with irregular markings of dark brown, the ventral surface is porcelain-white with an irregular patch of dark brown or black covering the area about the umbilicus. The surface is everywhere covered with spiral concentric, serrated ridges, giving the surface a file-like appearance. The apex is sharply conical.

Locality: Pointe de foi, St. Vincent, British West Indies.

--- A. Hyatt Verrill

NEW PUBLICATIONS RECEIVED

Catalogue of the Recent Mollusca of Canada by Aurele La Rocque
National Museum of Canada Bulletin 129- 1953

This is a sizable book of 406 pages, paper bound. The list price is \$2.50 but to this may have to be added postage. I am not sure and suggest to those wishing the book that they either order from the National Museum of Canada at their published price of \$2.50 Canadian currency, or I will get a copy and mail it to you for \$3.00 (the extra four bits to cover postage, letter and nuisance)

But back to the book. This is a work that must have taken up a lot of Aurele's time. It not only covers all species known in Canada of the Recent species of marine shells known on both Atlantic and Pacific but also covers the land and freshwater.

The list is the kind that we all like- the author not only gives the range, the original reference but adds current references to the best figures. Also type locality.

It is a work that should be in all libraries of serious conchologists.

Notes by J.R. le B. Tomlin, M.A. on Marrat's Species of Oliva
Liverpool Public Museums Reprinted from The North Western Naturalist
Sept. 1953 Arranged and introduced by W.K. Ford.

This is a valuable 8 page work and very important for those working with the Olividae.

The Rev. Henry Hugh Higgins, M.A.- A Liverpool Biologist by W.K. Ford
Liverpool Bulletin Vol.2, Nos. 1 & 2, July-Oct., 1952 .

Among the many activities and contributions to science the Rev. Higgins in 1876 made a trip to the West Indies on behalf of the Museums. This trip was primarily for birds but many items were taken some of considerable importance. This expedition chartered the steam yacht Argo and perhaps the greatest contribution to conchology was the Murex argo Clench and Farfante. An excellent full page plate of this rare shell is in this paper.

Frederick Price Marrat 1820-1904- A Liverpool Conchologist by W.K. Ford
Liverpool Bulletin Vol.2, No.3 Feb., 1953

This is an interesting account of the life of Marrat. One full page plate of Rostellaria martinii (Marrat) from Cebu, Philippines.

Review of the Atlantic Periwinkles, Nodilittorina, Echininus, and Tectarius By R. Tucker Abbott Proceedings of the United States National Museum, Vol. 103, No. 3328, 1954

This is a very thorough and well illustrated paper. Some of the species in these groups are frequently confused- Nodilittorina tuberculata Menke is frequently confused with Echininus nodulosus.

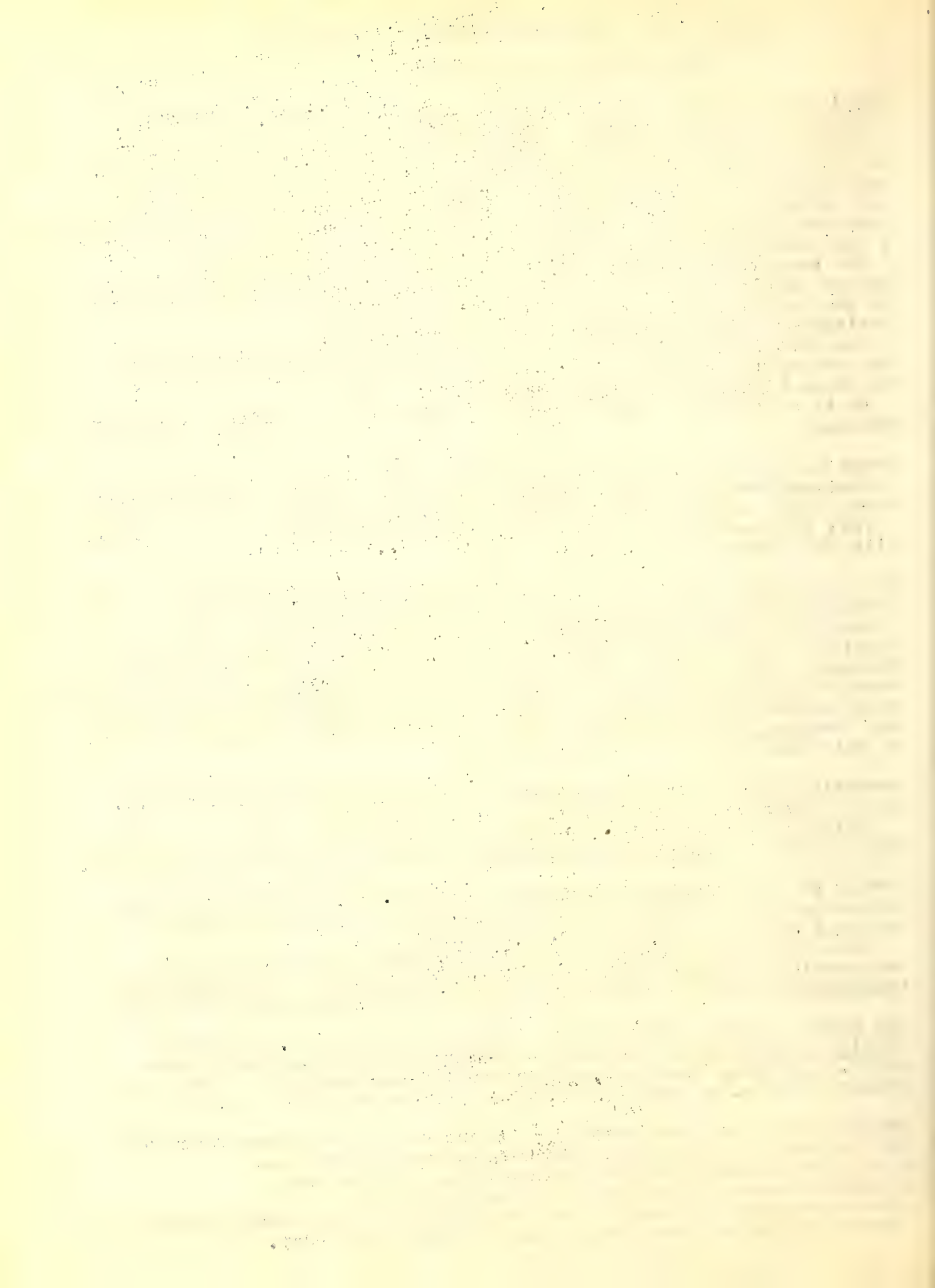
The gross anatomy and occurrence in Puerto Rico of the pelecypod Yoldia perprotracta. Germaine L. Warmke, Mayaguez, Puerto Rico, and R.T. Abbott, U.S. National Museum (Communicated by Harald A. Rehder) Journ. of Washington Academy of Sciences Vol. 43, No.8

The following are some very fine papers on the molluscan fauna of New Zealand by R.K. Dell, Dominion Museum, Wellington.

A Molluscan Fauna From the Chatham Rise, New Zealand

A Recent Species of Galeodea in New Zealand

The Freshwater Mollusca of New Zealand Part I The Genus Hyridella
Marine Biology- Reprinted from The Antarctic Today.



MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA
April 6, 1954

The meeting was called to order at 7:45 PM by Miss Ruth Coats, president, who welcomed 42 members and guests.

Among the guests were Mr. Raunio of Finland, Mr. Ghazi Khader of Amman, Jordan and Mr. Fabio Gomez of Montezalas, Colombia. We are indeed glad to welcome guests from other countries as well as local visitors.

Miss Bessie Faulkner announced a paid membership of forty-nine. This is an increase of four over last month's report.

Several of our members collected on the March 14th lowtide as announced in last publication of the Minutes. Crawford N. Cates reported on Whites' Point and Mrs. Brooks collected at Newport Bay.

Miss Bessie Faulkner had occasion to take a trip to San Felipe, Baja California and had nice collecting in this area.

Miss Florence Thurlow reported on a family trip down the West Coast of Mexico as far as Guadalajara, south of the Tropic of Cancer about 150 miles. Midday collecting is almost impossible in this locality because of the heat.

Topolobampo was very poor and Guaymas was only fair. Many winter residents of Guaymas are shell collectors for recreation only and have turned to hunting Indian arrowheads because of the lack of marine fauna to be found as in previous years.

We are sorry to hear of John Burch being in the hospital and look forward to seeing him at our May meeting. It is indeed an occasion to be noted when either of the Burch family is absent. Such regularity in attendance and contribution to our club would be appreciated from other members.

Mrs. Mary Turver presented a sample menu for the AMUPD banquet to be held Saturday the 19th of June and urged all member interested to register with her that reservations might be made.

Your secretary was the speaker of the evening and reported on the genus Haliotis with special reference to the nine valid species to be found on the Pacific Coast of North America.

Worldwide species were discussed as to distribution, taxonomy and commercial importance. An interesting observation was made of the work being done by Takashi Ino of Japan as regards the species of commercial value in that area.

Local material was shown in juvenile as well as adult forms. The extensions of range of several species was announced. Habitats of our native races was mentioned. The use of gross animal anatomy in future taxonomy is necessary.

The meeting was adjourned at 9:30 PM by Miss Ruth Coats to allow the group to examine the thirty foreign species as well as numerous examples of Pacific Coast species that were brought by the speaker.

D.L.Burford, Secretary

MINUTES 133
MAY 1954
CONCHOLOGICAL
CLUB OF SOUTHERN
CALIFORNIA

Subscription \$2.50 per year

Please mail all news to your editor- John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Phone Ax 3-5710
Home phone Ax 2-7965

TO PUBLISH OR NOT TO PUBLISH ?

Dr. Fred Baker before his death some years ago taught me a substantial part of what little I have been able to learn about the study of mollusks. Dr. Baker was a great scholar and I will always feel that my proper place was and is that of a novice at the feet of the master. His great fund of knowledge was amazing and his personal opinions have influenced my thinking for life.

One of Dr. Baker's confirmed opinions was that ' All students including the amateurs should be urged to publish what they have learned in studying any species or group. To be true their lack of thorough training in taxonomy may result in the names they apply finding their way to the synonymy, but it has been my experience that even the most poorly written descriptions seldom fail to contribute at least something to our knowledge of that species.'

My experience has been to find this peculiarly true. A student studying a species or group who fails to read a paper merely because the name was not accepted by some rule of nomenclature and is in the synonymy may well be overlooking a vast amount of sound information. In fact, it is very often true that all of the real work was done by those whose name was found to be preoccupied or some such thing. There have been a number of outstanding cases where a person with little or no knowledge has by means of making an elaborate card catalogue or similar plan suddenly renamed a

host of species originally described by genuine scholars, and his names must be accepted even though the author of the new name may not be quite certain whether it is a mollusk or a tiger that he is giving a new name. It is sufficient if he has discovered an older use of the same name.

There can certainly be no disgrace connected with the selection of a name that proves later to be a homonym. The pages of the Nautilus will show where Dr. Pilsbry and a host of others have been compelled to adjust previous descriptions giving new names. Dr. Dall described a large number in this manner, some unfortunately not noted until after his death. In order to be certain that at no time in the history of conchology has a certain name been applied to a species of a certain genus involves a vast amount of checking. The best advice to an author seeking a name for his new species is probably to think of his friends and select one preferably with a Polish name or some such thing and name it after him, or perhaps go into the literature. I do not recall many named ichibodia after the well known Crane character. To attempt to select a descriptive Latin name is simply asking for trouble. It is ten to one that someone has already used that name.

But to return to the question of whether a person should publish or not? He may have studied the life habits of the species in the field, collected specimens repeatedly at different seasons, so that the species has become an old friend to him. Should he attempt to describe his species and give all of the information he has accumulated about it, or should he feel obliged to mail it away to some distant scholar who has never seen a living specimen and who will give it a very brief if excellent scientific description? Or he may as one of my acquaintances did, send alcoholic specimens of a new marine snail. The anatomical drawings and description were very good indeed, but my friend after reading it carefully asked "Wonder what use he makes of that little feeler that comes out about here on one side and that he waves as he crawls about? No comment about that in anatomical figures or anywhere else." It was probably of no consequence. But what was that little feeler anyway? If the collector had written it he would have told all about it.

NO. I still go along with Dr. Baker and think that if a person thinks he knows something about a species that may not be available he should publish what he knows.

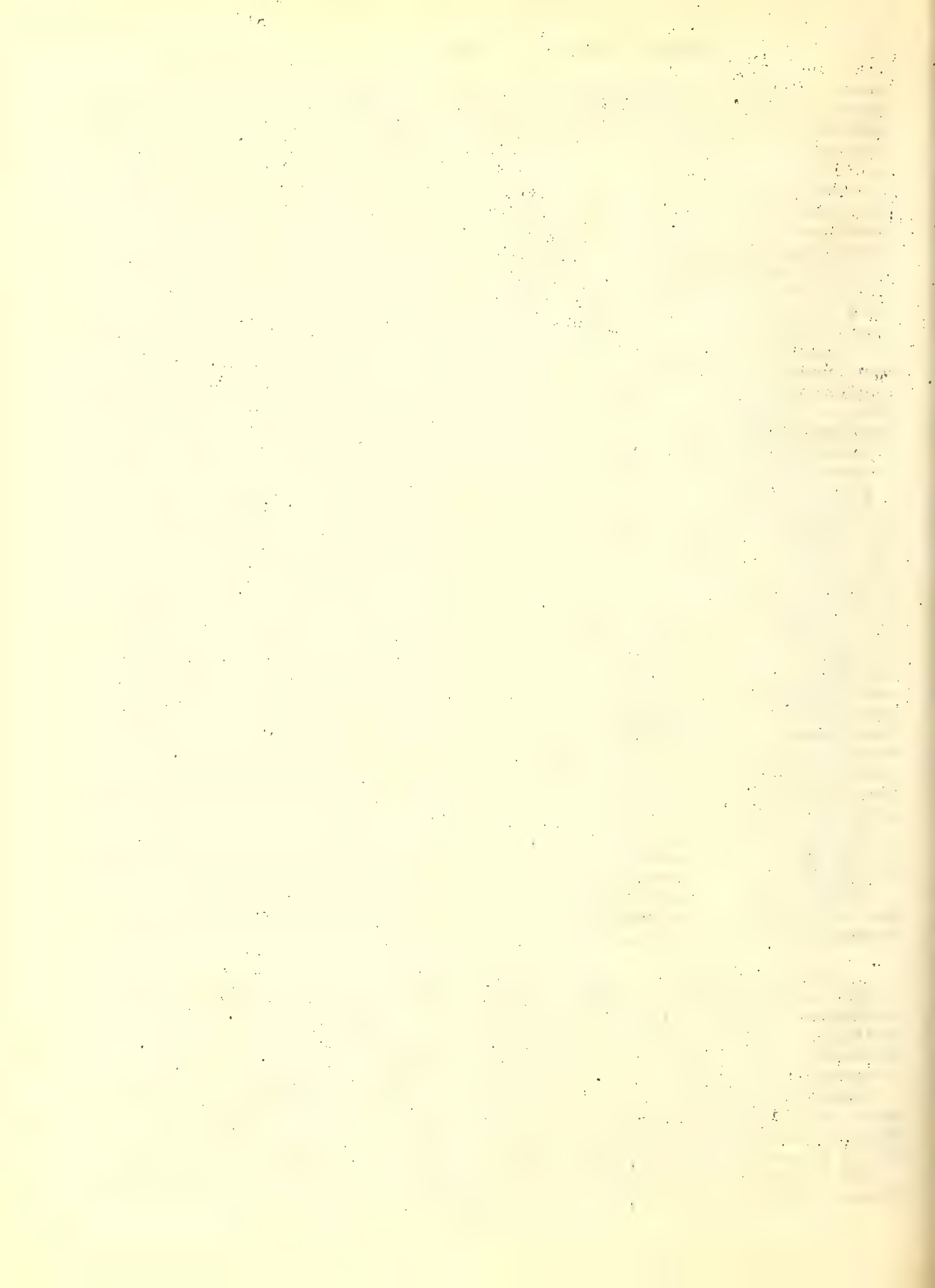
This is not a quarrel with our fortunate friends who work in the beautiful Ivory Towers, but I doubt if they are entitled to a monopoly in publishing.

ANNUAL MEETING OF THE PACIFIC DIVISION OF THE A.M.U.

The annual meeting of the Pacific Division of the American Malacological Union will be held at Founders Hall, University of Southern California in Los Angeles on Friday and Saturday, June 18th and 19th. Registration will be at 8:00 A.M. on the 18th. Program will commence at 10:00 A.M.. Guests are welcome to attend.

Reservations for a room in the Town and Gown Dormitory can be made by writing directly to Mrs. Pat Arnold (Director, Housing Bureau) at 3518 University Ave., Los Angeles 7, Calif. The rate is \$2.25 a person per day. Make your reservations early.

The titles of papers to be given should be submitted to Mr. Harry Turver, 8640 Evergreen, South Gate, Calif.



Philately vs. Conchology

Many of my conchological friends are stamp collectors too. I have often wondered why this is so. Until recently, however, no real reasons appeared to exist for the relationship between philately and conchology. Of course, a philatelist could pursue the topical specialty of shells on stamps. Whether this would make him (or her) a concho-philatelist of philato-conchologist should be left to those able to bring abstruse reasoning to bear on the subject.

In a recent issue of a well known stamp magazine its London correspondent refers to an envelope bearing the endorsement "Don't charge- stamp eaten by white ants in the mailbox". He continues by saying: "I have, myself, seen covers which have been mailed in roadside mailboxes bearing the endorsement "Stamp eaten by snails; for it seems they like the dextrine in the gum."

Such a cover would indeed be a prize for our concho-philatelist (or philato-conchologist, if you prefer). Imagine the difficulty of trying to decide whether this rare item should be in the stamp collection or the shell collection. AGS 1/18/54

(Allyn G. Smith)

The following note from Dr. Myra Keen, Dept. of Geology, Stanford University, Calif. "Among the archives or pseudo-archives which have fallen to my care at Stanford University is a paper-bound set of letters entitled, "Transactions of the Isaac Lea Chapter of the Agassiz Society for 1892." This consists of accounts of the various members, most of whom lived on the East Coast, of their collecting experiences during the year. There are a few faded photographs and a sketch map or two of a collecting site which seems to be on Long Island. The only name familiar to me is that of Edmond Roper. The "Transactions" were sent to Prof. Josiah Keep, an officer, for safe keeping, then after his death went to Ralph Arnold, who turned them over to Mrs. M.B. Williamson, or perhaps Mrs. Williamson's heirs gave them to Ralph Arnold and he left them here-- that isn't clear. At any rate, I would be very glad to transmit them to any interested group. It seems, from the content of the Transactions, that they should go to some Eastern institution."

Dr. Myra Keen has received a coveted double appointment at Stanford for after Sept. 1, she will be Curator and Assistant Professor of Paleontology.

MUSSEL SHELL FROM LAKE ERIE

Like a porcelain butterfly
On the tawny sands you lie,
Blushing orchid and pearl.
On your back are dusky rings
And within your shelly wings
Silvered rainbows swirl.
Once a mollusc fashioned you,
Alated valves, hinge and hue
In a self-made memorial

Ida Josephine Brittain

Japan is having a plague of starfish which is equal to the famous plague of locusts, and my friend Dr. Ino is in charge of the research aimed to try to find a way to get rid of them. Honestly, I never saw anything like it: Tokyo Bay, for instance, is almost jellylike with the things- perhaps 12 or more to a square meter of surface on the surface or just below it. He is handicapped by a complete lack of literature dealing with everything except the taxonomy and embryology of the starfish....." From a letter of Dr. A.R. Cahn April 12, 1954.

** Note** It is interesting that we have had something of a starfish plague here this year.

A note from Mr. Louis B. Mousley, Del Rosa, Calif. " The " Review of the Eastern Pacific Species of the Molluscan Family Cancellariidae " by A.M. Strong in Minutes 135 and 136 interested me very much because the Cancellaria are one of my favorites.

I would like to tell you of one of my many collecting thrills of this past winter. I spent Dec., Jan. and Feb. collecting in various parts of Mexico, and while collecting out of Punta Penasco in Jan. had the luck to discover a large group of live Cancellaria acuminata Sowerby. I was working an extreme low tide in Adair Bay far north of Punta Penasco. The tide had changed and was coming in rapidly. The acuminata popped on a clean, level, wet sand flat covering an area of about two acres, but they were widely separated, anywhere from the water's edge to back about sixty feet from the water. They were pale yellowish-orange when alive, and to me were beautiful. I realized at once what I had found and although I was alone, I couldn't help letting out a long-drawn Wow ! of unbelief. I gathered enough for a nice tray--- and ten minutes later the area was under water. That is just one of the experiences that makes shell collecting so fascinating to me."

Note from Bob Talmadge, Willow Creek, Calif.- " Still winter up here although there is a faint hint of spring. The Redbuds are coloring and the Digwood buds have started to swell. A few of the land snails have come out near the rivers, but everything in the higher elevations is still under a blanket of snow. Each rain brings a slight addition to the pack, for which we are grateful as the pack determines the amount of water that we have.

Will soon be working the lower elevations along some areas from which specimens are needed in order to determine the status of the subspecies and areas of intergradation of the big Monadenia. A couple of immature snails taken on the north side of the Klamath between Orleans and the mouth of the Salmon call for a full scale investigation. First Monadenia that I ever saw with a cross hatch sculpture---- in color and animal more like some from over on the Scott. No roads in the area from whence they came, so all work will be on foot or with pack animals. Will head north from the Klamath into the Siskiyou along this one watershed. Seems like an intrusion in the range of our typical Klamath River race.

I am enclosing a couple of photos of the expanded H. cracherodii. The pictures show the expanded and extremely round shell, and the still growing process at the spire of the immatures. The technical work on the pictures is not very good, but gives a general idea of the differences. There are just too many specimens to put it off as a pathologic freak. Also this situation can be found from juvenile throughout the various sizes to the dull granular senile specimens.

(cont.)

The work on the abalone is still going on, with much data coming in on the economic status of the family. There are also a number of notes on the animal and habitat. Have one folder full and am starting on another. If we get down in time for the AMU meeting this summer I hope to have some of this information segregated and typed up for a general discussion. Also have found that the same characteristics that I have found in our California species hold true in exotics when they pass into senility."

From the Bulletin of the Natural History Museum, San Diego

" Mr. Norman Lawson, President of the Society, donated a measuring instrument, primarily for use in the Conchology Department, to the Society. Its uniqueness lies in the fact that the instrument was designed and made by the President personally. Measurements can be read directly from the indicator. We wish to express our appreciation and our admiration for Mr. Lawson's ingenuity."

The Society is also starting to build up a library of Microcards. On each card are 30 to 40 pages of a book, reduced to microscopic size.

We have a letter from Dr. Paul Bartsch who is very happy working in his large fire-proof study at Lebanon. Dr. Bartsch has just completed the large Monograph of the Cuban Urocoptidae which covers 2,000 pages of MS and 78 plates. It has not been published but we hope to see it soon.

His next work will be the Turrids. He mentions that this is not merely a matter of arranging the known species under the present recognized superspecific group, but reviewing the status of the more than 500 described generic terms and seeing where our West American species will have to be placed.

Dr. Bartsch wrote in part as follows " I am interested in what you say about stored Turrids on the West Coast which prompts me to suggest that it would be well for the West American Mollusk students to send us a set of the specimens so that if new forms or species from not previously known localities may find a place in the volume or volumes- for I think there may be two- I think I have enough M.S. now for one."

** Note** I had written Dr. Bartsch that many out here were simply storing their Turrids waiting the publication of his monograph.

The annual six-month ban on collection or eating of mussels began on May 1. The State Department of Health has quarantined the shellfish until Oct. 31 because of the poisonous organism during the summer.

The department also warned that clams must be thoroughly cleaned before cooking and only the white meat may be eaten.

The Mirror for Feb. 10 contained an account of an amazed oyster gourmet who found not one but 116 pearls in one oyster opened for eating. Unfortunately they were of little or no commercial value.

There have been several articles in the papers lately about Crystal Cave, Ky. " A lost paradise of coral canyons etc." It is said to be the largest cave discovered and lined with fossil coral and shells.

The Daily News of March 9, 1954 has quite an article about a Mr. Michael D. De Alba and his shell horns. There is a photograph of him blowing on a horn obviously a large Charonia tritonis with a

chain of smaller shells no doubt by which to carry it.

" One of his favorites is the Biblical Chalzozerah, which he says is a conch-type trumpet that goes clear back to the stone age. But he also has some reproductions of Egyptian, Assyrian and Japanese Shinto horns that blow fine."

A letter from Mrs. Margaret McGowan, 603 N. Aliso St., Santa Barbara Calif. " Dear Friends: ... I am only just getting around to writing our friends. Our new son, Deryl, is fifteen months old now and quite a boy. He was born shortly after Carroll passed away. ... Local people took over Carroll's shell collection and it was a relief to me to pass the responsibility on to someone who knew more about shells than I did. I hope we will continue to hear from the club members once in a while..."

We have quite a magazine article before us about Dale Stingley. " Boyhood Hobby of Shell Collecting Leads Armour Man to Distant Shores". Mr. Stingley is chemist with the Armour Co. in Chicago and has a very large and very fine shell collection- over 15,000. This is a very nice full page article with an excellent photograph of Mr. Stingley and three very good shell plates.

We have a letter from Bill Looman who was with us here in California for several years. Bill is now back in his original home at 1206 Andrews Ave., N.E., Massillon, Ohio. He has been visiting fellow conchologists in Florida and his letter is as usual interesting. Bill reported that he heard from one elderly lady collector that she had heard of a collector getting a Conus gloria maris for \$75. Of course, Bill doesn't believe that but it makes a good story. Reminds me of Bronson's story about the lady that claimed she took a Cypraea moneta swimming rapidly and paddling just like a duck, and if anybody didn't believe it she had the shell to prove it.

Bill reports that Busyon coarctatum, thought at one time to be extinct, is now being brought in by the shrimp fishermen from the region of the Dry Tortugas. He got one specimen of it.

From the Fisheries Newsletter of Australia it is interesting to note that they report in shellfish taken last year for eating: Oysters- of three species - Crassostrea commercialis, Crassostrea gradiva, and Ostrea sinuata -- 7,399,904 pounds.

And of the scallops- Notovola meridionalis 645,777 lbs
Equichlamys bifrons -- 47,380 lbs. Mimachlamys asperimus-- 167,000
Also squids and clams. It is interesting to know the commercial species.

NEW PUBLICATIONS RECEIVED

Contribuicao A Zoogeografia Da Malacofauna Do Litoral Do Estado Do Parana by Carlos N. Gofferje - Separata Dos Arquivos Do Museu Paranaense Curitiba. pp 221- to 282, and 5 plates.

An interesting work giving the distribution, habitat and sizes of specimens taken.

Also Um Novo Escolecodonte Dos Folhelhos Ponta Grossa by Frederico Waldemar Lange- 1950

Arenitos de Vila Velha 1944

Novos Fosseis Devonianos Do Parana All by Lange

Novos Microfosseis Devonianos Do Parana

Ensaio De Catalogo Dos Moluscos Do Brasil por Frederico Lange de Morretes- Separata Dos Arquivos Do Museu Paranaense Curitiba- 1949

This is a remarkably complete check list of the molluscan fauna of Brazil including marine, land and freshwater. 216 pages, well indexed. The distribution of each species is given and usually information referring to the original collector. This work should be indispensable to any student working on the fauna of Brazil.

Boletim do Instituto Oceanographico Tomo III- Fasc. 1 e 2- Universidade De Sao Paulo- 1952. Various fine papers- 214 pages, numerous illustrations, maps.

Molluscan Faunules in Wisconsin Loess at Cleveland, Ohio by A. Byron Leonard- American Journ. of Sci., Vol. 251, May, 1953
Significant New Exposures of Pleistocene Deposits at Kirwin, Phillips County, Kansas by John C. Frye and A. Byron Leonard- State Geological Survey of Kansas, Bulletin 109, Part 3 1954
and Definition of Time Line Separating a Glacial and Interglacial Age in the Pleistocene by John C. Frye and A. Byron Leonard- Bulletin of the American Assoc. of Petroleum Geologists Nov. 1953

Africa's Rarest Cowries by Lloyd El Berry, Los Angeles, U.S.A. Reprinted from the Journal of the East African Natural History Society Vol. XXII No. 3(95) 4 pages, 1 plate.

We are proud of our member Mr. Lloyd Berry for his excellent paper on the East African Cypraeidae. The plate figures 3 photographs of Bernaya fultoni Sowerby. These are from a specimen in the collection of Mrs. H. Boswell of Johannesburg. The Burche's are rather proud of a fine specimen in their collection.

Hawaiian Shell News Vol. II No. 5 March 3, 1954 from the Hawaiian Malacological Society, Honolulu, Hawaii. This fine paper is a credit to our fellow students in Hawaii and contains a great deal of valuable collecting data. For example here is certainly a new one to me- Conus leopardus ponderosa? A teacher at Punahou, Mr. Wm. A. Knowlton recently collected a six inch Conus leopardus on the windward side of Oahu, which was a bright orange yellow on the inside.

Circulares Del Museo y Bibliotheca De Zoologia De La Habana- Editor : M.L. Jaume, 13 No. 351, Vedado, Habana, Cuba- Price of subscription \$1.50 per 100 pages.

This issue consists of pages 1000 to 1060 and contains a vast amount of very valuable material as well as many current items of great interest.

One really fine work is being continued. They are reproducing " Los Moluscos de Cuba en la Historia Fisica, Politica y Natural de la Isla de Cuba " by A. d'Orbigny. Translated by M.L. Jaume.

Catalogo de la Fauna Cubana (Proposicion) Por Miguel L. Jaume
The L-C Treatment of Venomous Bites or Stings by Dr. Herbert L. Stahnke

Giant " Kima " Pearls from Tropical Waters by Lay Yoc Socy

** Note the change of the name of the Circulares- They now include papers on other groups than mollusks.

Pacific Oyster Bulletin State of Washington, Dept. Fisheries, State Shellfish Lab., Quilcene, Wash. March 2, 1954

It is interesting to note that substantial quantities of seed oysters are having to be rejected on account of containing drills.

The A.M. Strong "A Review of the Eastern Pacific Species of the Molluscan family Cancellariidae" is here continued.

This shell is very slender with the whorls narrowly, concavely shouldered. The sculpture consists of close axial ribs and spiral cords, nodulous at the intersections. The color is given as red-brown or bluish. The original description gives the measurements as , Long. 1 8/10, lat. 7/10 poll. (approximately 45 x 17.5 mm.)

(1) Brochi in Bronn, Ergeb. Nat. Reisen, LL, 1831, p. 552

(2) Under Art. 35 of the International Rules the use of "i" and "ae" in the spelling of a name are not listed among the combinations defined as synonymous.

35. Massyla (Massyla) uniplicata (Sowerby)

Cancellaria uniplicata Sowerby, Proc. Zool. Soc. London, for 1832, p. 173. " Hab. ad America Meridionali, prope Panama"--- Conch. Ill., Cancellaria, 1832, sp. 12, pl.10, fig.13. " Panama".---- Thes. Conch. vol. 2, 1849, pl.93,fig. 35 (same locality) --- Reeve, Conch. Ic. vol. 10,1856, pl.11,fig. 49c.(same locality)---- Tryon, Man. Conch., vol.7,1885, pl.5, fig. 63 (copies fig. in Thes. Conch)---- Dall, Proc., U.S. Nat Mus.,vol. 37, 1909, p. 210. " Panama to Valparaiso". ---- Zetek, Les Moluscos de la Republica Panama, 1917, p. 526. " Panama"---- Pilsbry & Lowe, Proc. Acad. Nat. Sci., Phila., Vol.84 1932, p. 112. " Montijo Bay; Acapulco."

Lowe Collection

Acapulco

Montijo Bay

Sowerby in the Thes. Conch. lists this as a variety of C. mitri-formis Sowerby, and Crosse lists it as " Jr.". Dall and Zetek list it as a distinct species. The original figure in Conch. Ill. would seem to be that of an adult shell, differing from C. mitri-formis principally in the short, deeply notched canal and in the presence of but a single, poorly developed plication on the columella. It is also much smaller. In the original description the measurements are given as Long. .75, lat. .35 poll (approximately 20 x 9 mm.)

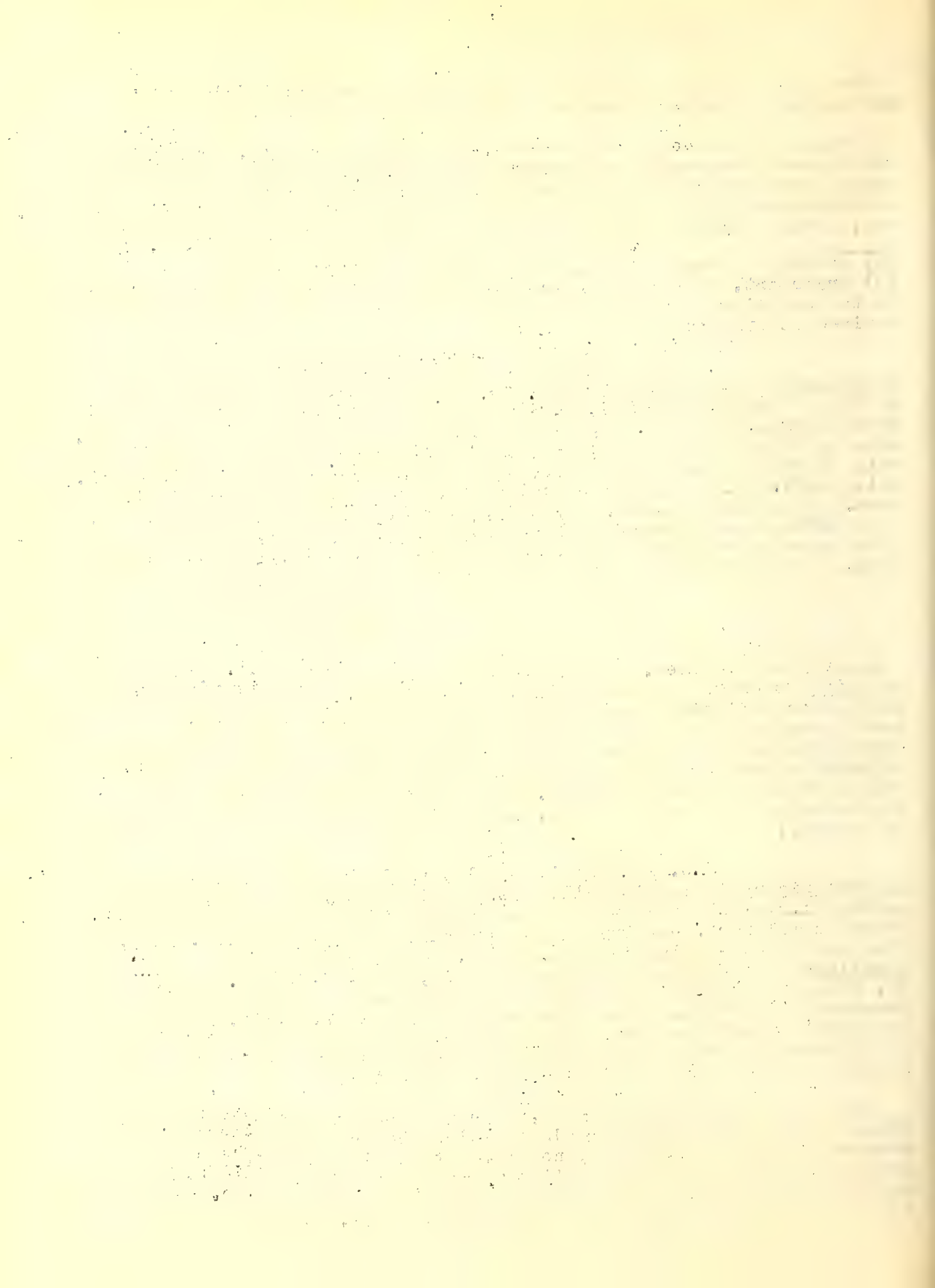
36. Massyla (Massyla) unalaskensis (Dall)

Cancellaria unalaskensis Dall, Proc. Calif. Acad. Sci. vol.5,1873 p. 58, pl.2,fig.1. " 30 to 60 fms. in Captaine's Harbor, Unalaska, Aleutian Islands". --- Tryon, Man. Conch., vol.7,1885, p.72, pl.3, fig. 41. (Copies fig. in Proc. Calif. Acad. Sci.)
Cancellaria (Sveltia) unalaskensis Dall, Bull. U.S. Nat. Mus., No. 112, 1921, p.84. " Unalaska to Cape Blanco, Oregon"---- Oldroyd, Stanford Univ. Publ. Geol. Sci. vol.2, pt.1, 1927, p.155. Range Unalaska , Alaska to Cape Blanco, Oregon."

(1) Grant and Gale place this in the genus Admete and state that it may be the young of Admete modesta Carpenter.

The shell is slender, whitish, with a nut-brown epidermis, sculptured with strong spiral cords of which the posterior three are crossed by short axial ribs, nodulous at the intersections. The columella has two or three oblique plications. The measurements are given as, Long. 0.75, Lat. 0.3 ins. (approximately 20 x 7.5 mm.)

(1) Mem. San Diego Soc. Nat. Hist, vol. 1, 1931, p. 632



37. Massyla (Massyla) circumcincta (Dall)

Cancellaria circumcincta Dall, Proc. Cal. Acad. Sci., vol.5, 1873, p. 59, pl.2, Fig.2. " Popoff Strait, Shumagin Island".---- Tryon, Man. Conch., vol.7, 1885, p.72, pl.3, fig.42 (copies fig. in Proc. Calif. Acad. Sci.)

Cancellaria (Sveltia) circumcincta Dall, Bull. U.S. Nat. Mus., No. 112, 1921, p.84. " Unalaska to Pt. Etches, Alaska"---- Oldroyd, Stanford Univ. , Publ. Geol. Sci., vol.2, pt.1, 1927, p.155. " Range Unalaska to Pt. Etches, Alaska".

The shell is rose pink, thin and slender, sculptures with strong spiral cords crossed by faint, irregular, axial riblets on the upper whorls. The columella has two or three faint plications. The measurements of the type are given as, Long. .82, lat. .37 ins. (approximately 20 x 9 mm.)

38. Massyla (Massyla) modesta (Carpenter)

Cancellaria modesta Carpenter, Suppl. Report Brit. Assoc., 1863, pp 628, 660 (Smithsonian Reprint, pp. 114, 146) " Vancouver District" ---- Ann Mag. Nat Hist., ser. 3, vol.15, 1865, p.32 (Smithsonian Reprint, p.245) " Neeah Bay; 1 specimen and fragments." ---- Newcomb, Nautilus, vol. 10, 1896, p.18.

Cancellaria (Sveltia) modesta Carpenter, Dall, Bull. U.S. Natl. Mus. 112, 1921, p.84. " Aleutian Islands to Neah Bay and Puget Sound"---- Oldroyd, Stanford Univ. Publ. Geol. Sci., vol.2, pt.1, 1927, p.154 (same range)

Admete modesta (Carpenter), Grant and Gale, Mem. San Diego Soc. Nat. Hist., vol. 1, 1931, pp 622, 623, pl.27, fig.5 (Specimen figured a variety with less tabulate whorls than those commonly classified as this species, from Sulphur Canyon, Ventura Co., a Pliocene fossil.)

There is no figure of a typical specimen of this species and the identification of the fossil specimen is questionable. The shell is described as rather slender, reddish; whorls rounded, sculptured with spiral cords and fine lines of growth; the columella having two plaits and a minute basal plait. The measurements are given as, Long. .68, lat. .34 ins. (approximately 17 x 8.5 mm.)

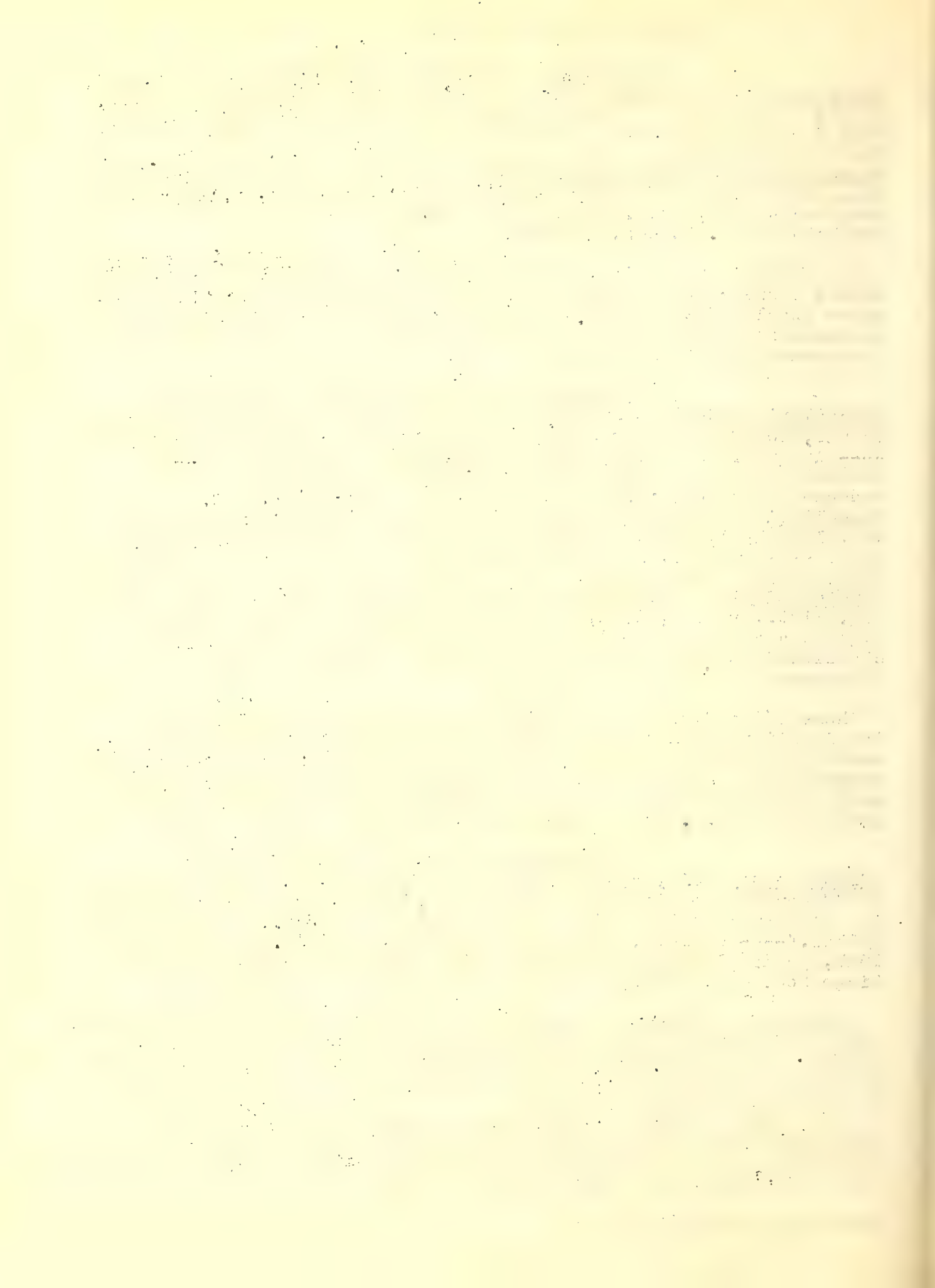
39. Massyla (Massyla) rhyssa (Dall)

Admete rhyssa Dall, Proc. U.S. Natl. Mus., vol.56, 1919, p.306. " Off South Coronado Island in 155 fms."---- Bull. U.S. Natl. Mus. No. 112, 1921, p.84. " Santa Rosa Island, Calif., to South Coronado Island."---- Oldroyd, Stanford Univ. Publ., Geol. Sci., vol.2, pt.1, 1927, pp 156, 167. (same localities)--- Grant and Gale, Mem. San Diego Soc. Nat. Hist., vol. 1, 1931, p. 623 (same localities)

This small, unfigured species is sculptured with about 12, narrow, axial ribs crossed by a few prominent spiral threads, somewhat nodose at the intersections. The columella has three oblique plaits. In the original description the measurements are given as, Height of shell 7, diameter 4.5 mm.

The Catalina Island , California, record by Lowe for Admete gracilior Carp. is probably based on specimens of this species which was not described until several years after Lowe's specimens were identified. The specimens agree very well with the description.

Nautilus, vol.18, 1894, p.9



40. Massyla (Massyla) gracilior (Carpenter)

Admete ? gracilior Carpenter, Gabb, Pal. California, vol. 2, 1866, p. 50. " Santa Barbara, California, Post-Pliocene." ---- Lowe, Nautilus, vol. 18, p. 19 " Catalina Island"

Admete couthouyi gracilior Carpenter, Dall, Bull. U.S. Nat. Mus. No. 112, 1921, p. 84. " With the type. Also Pleistocene, San Pedro, California". ---- Oldroyd, Stanford University Publ. Geol. Sci. ... vol. 2, No. 1, 1927, pp. 158, 159, " Range . Arctic Sea to San Diego."

It is very doubtful if this unfigured species occurs in the living fauna, tho it is probably closely related to M. rhyssa Dall and M. woodworthi Dall of the California fauna. The range given by Oldroyd and the recent record by Eyerdam from Alaska are undoubtedly based on misidentifications. The confusion in the use of the name has probably come at least in part from Carpenter's comparison with Admete couthouyi (Jay) in the original description. Grant and Gale state that " the true gracilis Carpenter in Gabb is probably a variety of modesta."

Examination of a good series from the Santa Barbara Pleistocene, at points certainly very near to the type locality show that it is quite a distinct species. The shell is rather slender with well rounded whorls, sculptured with about 10 strong axial ribs crossed by a few fine spiral cords. The columella has two oblique plaits and an indistinct basal plait. In the original description the measurements are given as, Long. .35, lat. .16 ins. (approximately 9 x 4 mm.)

(1.) Nautilus, vol. 51, No. 3, 1938, p. 101

(2) Grant and Gale, Mem. San Diego. Soc. Nat. Hist., Vol. 1, 1931, p. 623

41. Massyla (Massyla) woodworthi (Dall)

Admete woodworthi Dall, Nautilus, vol. 18, 1905, p. 123. " Monterey Bay in 10-45 fms." ---- Bull. U.S. Nat. Mus., No. 112, 1921, p. 84 " Monterey to Santa Barbara Islands". --- Oldroyd, Stanford Univ. Publ. Geol. Sci., vol. 2, pt. 1, 1927, p. 160. " Range. Monterey to Santa Barbara Islands."

This unfigured species is said to be whitish with a yellowish brown epidermis, sculptured with 8 or 9 obscure riblets on the upper whorls and rounded spiral threads with wider interspaces. On the upper whorls the spiral thread at the shoulder is the most prominent giving them a subtabulate appearance. The measurements of the type are given as , Long. 9, max. diameter 4.5 mm.

Subgenus Aphera H. & A. Adams

Aphera H. & A. Adams, Gen. Rec. Shells, vol. 1, 1854, p. 277 (by monotypy)

Cancellaria tessellata Sowerby, living, west coast Amer.

The shells placed in this subgenus are like those in the typical Massyla in the absence of the siphomal fascicle and in the small, oblique plaits on the columella. They differ in the more ovate shape, short or notched canal and in having the inner lip with a

heavy callus spreading over the body of the shell.

Key to west coast species in the subgenus Aphera

Sculpture decussated with close spaced axial ribs & spiral cords

. Whorls evenly convex, not shouldered

.. Spire blunt, shorter than the aperture

Length 20, breadth 10 mm..... tessellata

.. Spire pointed, about as long as the spire

..... oblonga

. Whorls slopingly shouldered

.. Axial ribs about 20 on the body whorl

Length 16, breadth 8.3 mm californica

.. Axial ribs about 36 on the body whorl

Length 21.5, breadth 9.5 mm..... corbicula

Sculpture of broad axial ribs and fine spiral threads

Length 43, breadth 21 mm..... io

Sculpture of spiral cords and lines of growth

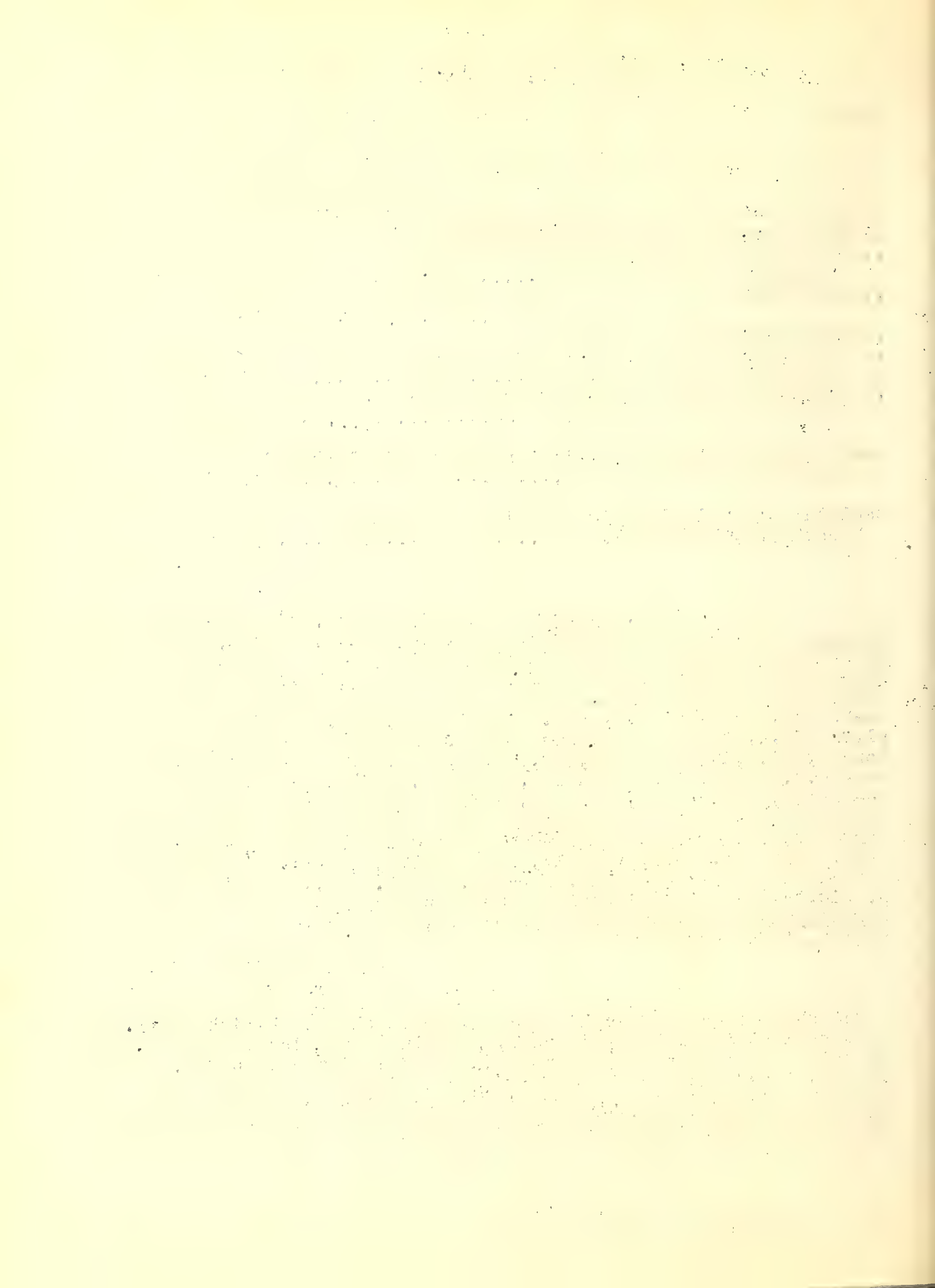
Length 3.5, breadth 1.8 mm..... microsoma

42. Massyla (Aphera) tessellata (Sowerby)

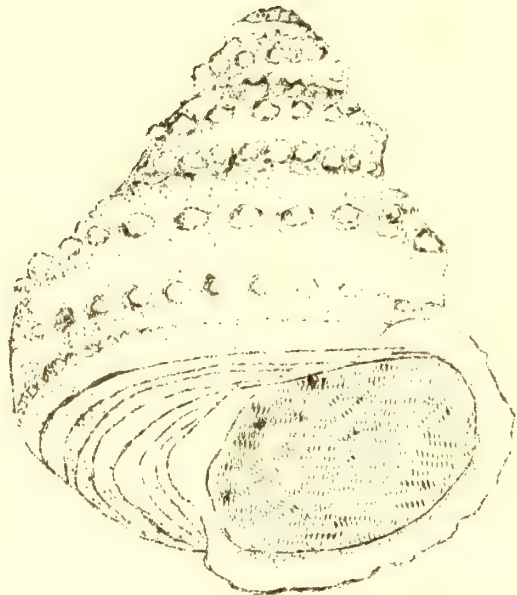
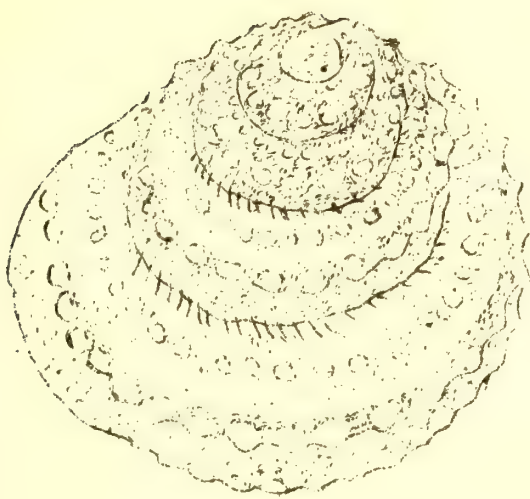
Cancellaria tessellata Sowerby, Proc. Zool. Soc. London, for 1832, pp. 51, 52. "Hab. in America Meridionalis (Bay of Caracas; St. Elena and Xipixapi, 7 to 10 fms." ---- Conch. Ill., Cancellaria, 1832, sp. 21, pl. 11, figs. 20, 20, jun. and adult (same localities) --- Kiener, Icon. Conch., Fam. Canaliferes, vol. 2, 1941, pp. 32, 33 pl. 9m fig. 4. "Bay of Caracas and St. Elena" ---- Sowerby, Thes. Conch., vol. 2, 1849, pp. 447, 448, pl. 93, fig. 32. "Bay of Caracas" ---- C.B. Adams, Panama Shells, 1852, sp. 162, p. 137. "Tabaga" --- Reeve, Conch. Ic., vol. 10, 1856, pl. 15, figs. 70a, 70b (cites original localities) --- Tryon, Man. Conch., vol. 7, p. 75, pl. 4, figs. 58, 59, 60 (copies figs in Reeve and Thes. Conch.) --- Stearns, Proc. U.S. Nat. Mus., vol. 17, 1894, p. 173, "La Paz Harbor, on a small island." ---- Dall, Proc. U.S. Nat. Mus., vol. 37, 1909, p. 210. "Gulf of California to Guayaquil." Cancellaria tessellata Sowerby, Olsson, Nautilus, vol. 37, 1924 p. 123. "Mancora, Peru"

Lowe Collection
La Paz, Mexico

The shell is cylindrically oblong, spire short, whitish, banded or tessellated with purple rust, sculpture granulous. The columella is said to have two plaits but the original figure on Conch. Ill. shows a third plait at the end of the columella. The inner lip is much thickened with a heavy callus over the body of the shell. In the original description the measurements are given as, Long. 8/10, lat. 4/10, poll. (Approximately 20 x 10 mm.)



Sent in by A. Hyatt Verrill



A lot of shells from my collector in the West Indies, not only contained the Pleurotomaria (Porotrochus adansonianus) (see MINUTES #137), but also a fine specimen of the exceedingly rare Turricula imperialis, Dall. Only two other specimens are known. One in the National Museum, the other at Harvard. Both of these are immature, about one-third the size of my specimen, and both are badly broken. Therefore the specimen in my possession is the only adult as well as the only perfect specimen of this shell in the world as far as known. The shell has no periostracum but is covered with a thin layer of chalky material which, where rubbed off, exposes the lustrous iridescent surface of the shell itself, much in the manner of Astraca heliotropium. The interior of the aperture is brilliantly pearly, suffused with pale orange or salmon.

There are five whorls separated by deep sutures. Each whorl has two conspicuous concentric spiral rows of pointed nodules with a third interrupted row of less conspicuous nodules close to the sutures. Between these rows of nodules the shell is sculptured with diagonal ribs. The under surface is sculptured with concentric, spiral, elevated ribs, the three outer being tuberculate. The rows of tubercles on the last whorl are plainly visible as grooves in the interior surface of the shell.

Diameter of shell: 52 mm. Height 50 mm. Caught in fish trap at 30-50 fathoms off St. Vincent, British West Indies.

MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA
May 4, 1954

John Fitch, vice-president, called the meeting to order at 7:45 PM and welcomed an attendance of thirty-eight persons.

Miss Bessie Faulkner, treasurer, announced a paid up membership of fifty two.

Crawford N. Cate urged all interested to gather at White's Point on Saturday, May 8th, for a -0.3 tide at 9:30 AM

Mr. Cates postponed until a later date telling us of their recent trip to Mulege, Baja California. We understand that collecting was good and look forward to hearing a complete account of their vacation.

Mrs. Brookes has just returned from a trip to Florida and had interesting collecting at several places. The mud-flats and break-water of Galveston, Texas afforded good collecting while Sanibel, Florida is as good as advertised.

A motion was passed in favor of adoption of the new constitution of the American Malacological Union.

Dr. John Garth of the Hancock Foundation of the University of Southern California was introduced as the speaker of the evening.

Dr. Garth gave a paper illustrated by color slides on the distribution of Marine life with relation to temperature. I am sure that even the most experienced as well as the beginners in our club were able to gain new and valuable information from the speaker.

We are living in an area of transition from Panamic to north temperate forms of fauna. This area of some six hundred miles is bounded on the north by Point Conception, California and Punta Entrada, Baja California in the south.

The Gulf of California, which is primarily in this transitional zone, has a fauna mainly panamic with a number of north temperate forms to be found in the northern end of the Gulf.

Our coast is bathed by the Humboldt current that moves from the north polar region toward the equator and accounts for the cold water found here and in Baja California. Such a condition is paralleled in the Pacific Ocean of South America with the Peru current carrying water from the South polar regions toward the equator.

The eastern coasts of North and South America are affected by a reverse condition with equatorial waters being moved towards the polar regions.

I, for one, am grateful to our program chairman for obtaining such interesting and experienced speakers.

D.L. Burford, Secretary.

MINUTES 139

JUNE 1954

CONCHIOLOGICAL CLUB OF SOUTHERN CALIFORNIA

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ANNUAL MEETING OF THE PACIFIC DIVISION OF THE A.M.U.

The annual meeting of the Pacific Division of the American Malacological Union will be held at Founders Hall, University of Southern California in Los Angeles on Friday and Saturday, June 18th and 19th. Registration will be at 9.00 A.M. on the 18th. Program will commence at 10.00 A.M. Guests are welcome.

Reservations for a room in the Town and Gown Dormitory can be made by writing directly to Mrs. Pat Arnold (Director, Housing Bureau) at 3518 University Ave., Los Angeles 7, Calif. The rate is \$2.25 a person per day. Make your reservations early.

The titles of papers to be given should be submitted to Mr. Harry Turver, 8640 Evergreen, South Gate, Calif.

115

115

115

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115

NOMENCLATURAL NOTES ON THE PELECYPOD FAMILY VENERIDAE

By A. Myra Keen

Stanford University, California

In the Minutes of the Conchological Club of Southern California for September, 1951 (Minutes 113, pp. 2-11), I attempted a provisional classification of the Veneridae, asking for criticisms. Several workers have kindly made suggestions, notably Drs. Julia Gardner, F.E. Eames, J. Marwick, Messrs. R.L. Casey and W.G. Tremlett, who have pointed out several reallocations that seem desirable. As also new information on genera I had not been able to study before needs to be put on record, I combine these miscellaneous observations into one paper.

Recently I have published in a paleontological journal a brief nomenclatural note which I wish to bring to the attention of malacologists who may not otherwise see it. As it is short, I quote it here in full:

Ventricolaria and Similivenerus insolida, new names in the family Veneridae

Journal of Paleontology, vol. 28, no. 2, for March, 1954, pp. 217-218, published in late April, 1954

Ventricola Romer, 1867 (Malak. Blatter 14, p. 115) was proposed for a number of species previously assigned to Venus, without indication of a type. Dall in 1902 (Proc. U.S. Nat. Mus. 26, p. 355) cited Venus rugosa Gmelin, 1790 (not Linne, 1767) (= V. rigida Dillwyn, 1817), and this selection has been accepted by most authors. Unfortunately, there is an earlier type designation by Kobelt, 1881 (Illustrirtes Conchylienbuch, vol. 2, p. 338). Unless a yet earlier and different one can be found--which seems unlikely--Kobelt's selection of Venus verrucosa Linne, 1758 makes Ventricola an absolute synonym of Venus Linne, 1758. As the Ventricola of authors comprises a well-knit and distinctive group of late Tertiary and Recent species worthy of generic or subgeneric recognition, I propose as a replacement the slightly altered name Ventricolaria Keen, nom. nov., with Venus rigida Dillwyn, a Recent Caribbean species, as type.

Cossmann in 1910 (Act. Linn. Soc. Bordeaux 64, p. 333) founded Similivenerus as a "section" of Marcia: type, by original designation, Venus solida Deshayes, 1825, a species from the Eocene of the Paris Basin. This specific name in preoccupied by Venus solida Schroeter, 1802, validly proposed for a Recent form of unknown provenance; hence, Deshayes' name must be rejected as a primary homonym however unrecognizable Schroeter's species may be. A search of literature reveals no synonym or subspecific name that could be used in substitution. With reluctance, then, I suggest that the long-established Venus solida Deshayes be replaced by Similivenerus insolida Keen, nom. nov. The type material of Venus solida comprises several lots in the Deshayes collection, housed in the Ecole des Mines, Paris. No holotype seems to have been segregated. I therefore designate as holotype of the renamed species the specimen figured by Deshayes (Descr. coq. env. Paris, vol. 1, p. 144, pl. 25, figs 3-4). As suggested by Max Desjardin (personal communication dated Oct. 12, 1953), this is probably one of six separated valves in a bottle of material from Acy (Oise), Deshayes' first-cited locality, which he recorded as "Assy-en-Mulitien."

The genus Globivenus in my 1951 paper was listed as of uncertain status, for I had at that time been unable to study the original reference or to see specimens. The type species of Globivenus, Venus effossa Philippi, is a very rare Mediterranean form. Through the courtesy of Mr. George Harrington, who during the past winter has been in Europe, I have received from Dr. P. Tasdent of the Stazione Biologica, Naples, photographs of a fine specimen; and later had on loan from the Musee Oceanographique, Monaco, two specimens, one dry and one in alcohol (the latter was their only preserved specimen, dredged in 125-150 fathoms, off Monaco, southeastern France). Exteriorly this species resembles our own Ventricolaria fordii, but there is a deeply sunken lunule into which is incised a peculiar channel. One might consider Globivenus subgenerically related to Ventricolaria, but as between the nomenclatural awkwardness of putting a later name ahead of an earlier, in the combination Ventricolaria (Globivenus) or the irony of subordinating a widely distributed group to a restricted one in the combination Globivenus-(Ventricolaria), I prefer to regard Globivenus as a separate genus closely related to Ventricolaria. Besides, there seems to be a geographic justification, for in the literature and collections at hand, I find Globivenus restricted to the Mediterranean, Ventricolaria to the western Atlantic and eastern and western Pacific; and Ventricolaria seems to have been confined to the same regions in the Tertiary, whereas Globivenus is known only in the living fauna.

In my previous note I considered Periglypta a synonym of Dosinia. On evidence submitted by Dr. Eames, I have become convinced it is clearly separable.

The revised classification of the subfamily Venerinae therefore now stands as follows, with a list of such fossil and living species as I have been able to study or feel fairly confident of assigning:

Subfamily Venerinae

Venus Linne, 1758

Type (SD, Gray, 1847), V. verrucosa L.. Synonyms, Venusarius Dumeril, 1805; Clausina Brown, 1827; Ventricola Romer, 1867. Anterior lateral small; escutcheon smooth, large, bevelled in left valve only; pallial sibus short.

Venus, s.s.

Sculpture of concentric ribs intersected posteriorly by divaricate radial ribs.

V. (V.) declivis Sowerby. Recent, W. Africa

V. (V.) nodosa Dunker. Recent, West Africa

V. (V.) verrucosa Linne. Recent, Mediterranean.

Venus (Antigona)

Antigona Schumacher, 1817. Type (OD), A. lamellaris Schum.

Sculpture of cancellate and frilled concentric lamellae.

V. (A.) lamellaris (Schumacher). Recent, Indo-Pacific.

Venus (Ventricoloidea)

Ventricoloidea Sacco, 1900. Type (OD), Cytherea multilamella Lamarck, 1818.

No radial sculpture, anterior lateral elongate.

V. (V.) burdigalensis (Mayer). Miocene, France.

V. (V.) foveolata Sowerby. Recent, Indo-Pacific.

V. (V.) lyra Hanley. Recent, West Africa

V. (V.) multilamella (Lamarck). Recent, Mediterranean.

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V.(V.) nux Gmelin. Recent, Mediterranean

Circomphalus Morch, 1853

Type (SD, Sacco, 1900), Venus plicata Gmelin (preoccupied) = V. foliaceolamellosa Dillwyn, 1817. Trigonal, compressed, cordate, lunule impressed, escutcheon well defined in left valve, sculpture of raised and frilled lamellae. Miocene-Recent, Mediterranean area.

C. casina (Linne) Recent, Mediterranean

C. foliaceo-lamellosa (Dillwyn). Recent, West Africa

C. subrosalina (Tomlin) Recent, West Africa

Dosina Gray, 1835

Type (SD, Frizzell, 1936), D. zelandica Gray. Synonyms, Dorsina Gray, 1840; Dosinula Finlay, 1926. Sculpture mainly concentric; lunule small; pallial sinus short, triangular. (A number of species in the New Zealand Tertiary, listed by Marwick, 1927; only genotypes of subgenera listed here):

D. (Dosina) zelandica Gray. Recent, New Zealand

D. (Hina) pinguis (Marwick). Tertiary, New Zealand

D. (Kuia) vellicata (Hutton). Tertiary, New Zealand

D. (Marama) murdochi (Marwick). Tertiary, New Zealand

Globivenus Coen, 1934

Type (OD), Venus effossa " Bivona", i.e., Philippi, 1836. Globose, lunule deeply inset, with a medial channel; sculpture of undulating coarse and fine spiral ribs.

G. effossa (Philippi). Recent, Mediterranean

Melosia Dall, 1915

Type (Mono.), Cytherea glyptoconcha Dall, 1903. Synonyms: Artena Conrad, 1870 (preoccupied); Netara Frizzell, 1936. Trigonal, escutcheon area very large, equal in both valves; sculpture of widely-spaced concentric lamellae.

M. glyptoconcha (Dall). Miocene, eastern United States

M. staminea (Conrad). Miocene, eastern United States

Periglypta Jukes-Brown, 1914

Type (OD), Venus puerpera Linne, 1758. Synonyms: Proxichione Iredale, 1929; Tigammona Iredale, 1930. Ovate-quadrate, heavy; pallial sinus large, rounded; sculpture cancellate.

P. ambigua (Rovereto). Miocene, France

P. caesarina (Dall). Miocene, eastern United States

P. crispata (Deshayes. Recent, Caribbean

P. dominica (Palmer). Miocene, Caribbean area

P. fischeri (Recluz) Recent, Indo-Pacific

P. lacerata (Hanley) Recent, Indo-Pacific

P. laqueata (Sowerby). Recent, Indo-Pacific

P. listeri (Hanley) Recent, Indo-Pacific

P. monilifera (Sowerby) Recent, Indo-Pacific

P. multicostata (Sowerby) Recent, Gulf of California

P. puerpera (Linne) Recent, Indo-Pacific

P. reticulata (Linne). Recent, Indo-Pacific

P. reticulata edmondsoni (Dall, Bartsch, and Rehder). Recent, Hawaiian Islands

P. tarquinia (Dall). Miocene, Florida

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Plurigens Finlay, 1930

Type (OD), P. phenax Finlay. Somewhat resembling Dosina but with concentric ribs anastomosing at ends of shell.

P. phenax Finlay. Miocene, New Zealand

Ventricolaria Keen, 1954

Type (OD), Venus rigida Dillwyn, 1817. Synonym: Ventricola of authors, not of Roemer. Globose, lunule well depressed, escutcheon as in Venus, sculpture of concentric ribs and riblets, sometimes with faint radial striae.

V. blandiana (Guppy). Miocene, Caribbean area

V. callimorpha (Dall) Recent, Barbados, 76 fms.

V. fordi (Yates). Recent, southern California (also Pleistocene)

V. harrisana (Olsson). Miocene, Florida to Panama

V. hawaiiensis (Dall, Bartsch and Rehder). Recent, Hawaiian Is.

V. isocardia (Verrill) Recent, Gulf of California

V. magdalenae (Dall). Recent, Lower Calif.-Panama, 18-36 fathoms

V. pilula (Reeve) Recent, Australia

V. rigida (Dillwyn) Recent, Caribbean

V. rugatina (Heilprin). Pliocene to Recent, Florida

V. strigillina (Dall). Recent, Caribbean, 20-100 fms.

V. toreuma (Gould) Recent, Indo-Pacific

V. ucuttana (Dall). Oligocene, Mississippi

V. n. sp. Miocene, California

? Ameghinomya Von Ihering, 1907

Type (OD), Chione argentina Von Ihering, 1897. Escutcheon wanting; anterior lateral minute; pallial sinus small; sculpture either concentric or cancellate. Tertiary to Recent, southern South America.

? A. alvarezzi (D'Orbigny) Recent, Patagonia

? A. antiqua (King) Recent, Chile

A. darwini (Philippi) Tertiary, Chile

A. argentina Von Ihering. Tertiary, Patagonia

The allocation of Ameghinomya to Venerinae is highly tentative. Von Ihering did not describe the hinge but compared his genotype to the European Miocene Venus (Ventriculoidea) burdigalensis, the only difference he noted being in the lack of grooving in the escutcheon. Ortmann later described the hinge of a specimen from Patagonia, but as it was broken, he could not be sure of the presence of an anterior lateral tooth. Recently Dr. Soot-Ryen has pointed out to me the small anterior lateral in the Recent species usually called Chione or Protothaca antiqua (King). If this species were really close to Von Ihering's fossil species, it would seem Von Ihering would have mentioned the similarity. Lacking a better comparison, however, I feel I must tentatively associate the two fossil and two Recent species listed above. The generic description is drawn up from study of the Recent A. (?) antiqua, and therefore may be incorrect. Only study of well preserved fossil material from Argentina will settle the question.

This seems to be an appropriate place to comment upon a criticism first raised by Dr. Julia Gardner and more recently elaborated by R. Tucker Abbott in his " American Seashells", the objection that my proposed classification separates Venerinae and Chioninae, two obviously closely related groups and places them at opposite ends of the scheme. This separation is more apparent than real, the result of a necessarily linear order of listing. Actual relationships

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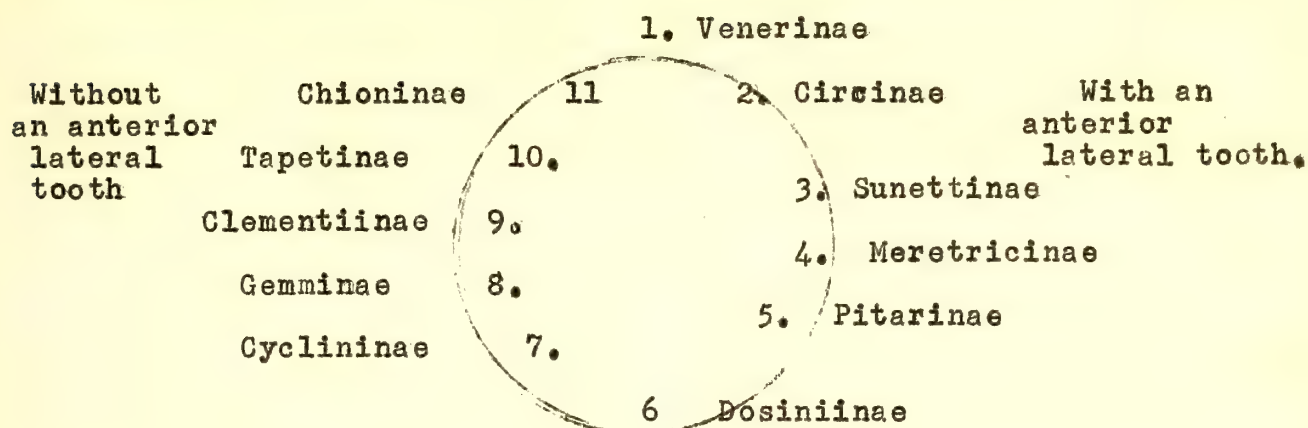
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may perhaps be better portrayed in the following diagram.



The subfamilies at either side are clearly differentiated, but 6 and 7 and 11 and 1 are principally distinguished by the presence or absence of the anterior lateral, although in both cases there are other minute but consistent external features that may be observed in differentiating genera and species, such as form of the escutcheon and details of ornamentation.

Subfamily Chioninae

In my 1951 classification I included Eurhomalea and Samarangia in Chioninae. I am now convinced that neither belong here. Eurhomalea is, rather, a candidate for Tapetinae. Under it may be placed not only the type species, E. rufa (Lamarck), but also the South American species hitherto assigned, in error, to Marcia and Samarangia--E. exalbida (Dillwyn) and E. lenticularis (Sowerby). These species were placed in Marcia and subgenus Samarangia by Dall, who regarded Venus exalbida as type of Marcia and overlooked the designation of Venus pinguis = V. opima Gmelin by Kobelt in 1881. Although exteriorly these species resemble Humilaria kennerleyi (also considered Marcia by Dall), they differ in having no marginal crenulations and hence should be transferred to Tapetinae. Samarangia, which Dall proposed as a subgenus of Marcia, with Venus quadrangularis Adams and Reeve as type, may not be a venerid at all but perhaps a cyprinid or arcticid. Dall's description of the genus seems to have been based on Venus lenticularis Sowerby, which he cited as an example, although he designated the other species as type. As shown above, V. lenticularis may be allocated to Eurhomalea C Gossmann. It seems unlikely that Dall had access to a specimen of Venus quadrangularis, which is a very rare species. The original figure by Adams and Reeve shows the hinge of the right valve only and does not show the pallial area. A good modern figure of the exterior was published by Clench (Nautilus, vol. 55, 1942, p. 73, pl. 6, figs. 1-4). The interior of the same specimen was figured by Kuroda (Venus, vol. 14, nos. 1-4, p. 29, pl. 1, figs. 1-4, 1945) under what now appears to be an unnecessary new name, Petroderma thaenumi Kuroda. Kuroda's figures show clearly the presence of an anterior lateral tooth and the complete absence of a pallial sinus. Notes taken by Dr. E.E. Eames who has studied the holotype in the British Museum (Natural History) shows that "there is a very small but

distinct pointed left anterior lateral tooth and there is no pallial sinus at all." The only venerid subfamily into which the hinge pattern might be presumed to fit--and this not too convincingly-- is Pitarinae, but this group has the pallial sinus always well developed. Hence, I conclude that Samarangia should be transferred out of Veneridae, probably to Cyprinidae (Arcticidae of recent authors), where the anterior lateral and entire pallial line are not in disharmony.

Miscellaneous Notes

On page 9 of my tentative classification (1951), I listed several generic names of uncertain status. On these I can now report: Aureitapes and Cyaneitapes Chiamenti, 1900 may be interpreted as nomen nudum, names only of color forms. However, to dispose of them, I hereby designate Venus aurea Gmelin, 1790 as type species of both. They are thus subjective synonyms of Venerupis Lamarck, 1818, together with Polinitapes Chiamenti, 1900 (which has line priority) the same species is type of the latter, designated by Dall in 1902.

Cyclopellatia Cossmann, 1907 is not a venerid
Mioclausinella Kautsky, 1936 is not as I suggested a nomen nudum, but may be legally ignored, for it was proposed without designation of a type species-- required by the International Code of Zoological Nomenclature for generic names proposed after 1931. The genus seems, anyway, to be a synonym of Circomphalus in Venerinae.

Paleomarcia Fletcher, 1936, (type species by original designation, P. tatei Fletcher), I regard as a subgenus of Frigichione. I believe, from a study of figures, that both groups belong not in Chioninae, as Fletcher provisionally allocated them, but in Cyclininae.

Zorei Brusina, 1907 (type, by monotypy, Z. sanguinea Brusina), remains a genus of uncertain status. The author listed it as the last of the pelecypods discussed, following Tapes, but this does not prove that it is necessarily in Veneridae. No figures were given of the minute type specimen (2 mm. long), which is from the upper Tertiary or Pleistocene of Yugoslavia.

The A.M. Strong "A Review of the Eastern Pacific Species of the Molluscan Family Cancellariidae" is here concluded.

43. Massyla (Aphera) oblonga (Sowerby)

Cancellaria oblonga Sowerby, Tanc. Cat., App., 1825, p.15. "Hab.?-Conch. Ill., Cancellaria, 1832, sp. 19, pl.11, fig. 19 (no locality given)--- Kiener, Icon. Conch., Fam. Cancellaria Canaliferes, vol.2, 1841, pp. 6,7, Pl.3, Fig.3. "Panama".

Not Cancellaria oblonga Sowerby, These Conch, vol.2, 1849, p.447, pl.93, fig. 25. "Straits of Macassar". This species is Cancellaria bifasciata Deshayes in Lamarck, Enc. Merth. Vers., vol.2, 1830, p.181 --- Reeve, Conch. Ic. vol. 10, 1856, pl.6, fig.27. "Straits of Macassar". (Reeve states, "The short desc. of C. oblonga in App. Tanc. Cat. does not agree with this fusiform Mitra like species.)

The west coast listing for this species seems to depend entirely on Kiener's statement of locality. The figure in Conch. Ill. shows a shell with the sculpture very similar to bessellata but with the spire much longer in proportion to the length of the aperture and of a uniform light color.

44. Massyla (Aphera) californica (Dall)

Cancellaria (Admete?) californica Dall, Bull. Mus. Comp. Zool., vol.43, 1908, pp. 296,297, pl.4, fig.4. "U.S.S. Albatross stations 2980 in 630 fms.. Also at stations 3346, 2839, 2923, 2936, and 4339, from off Tillamook Bay, Oregon, to the vicinity of San Diego in from 92 to 786 fms."

Admete californica Dall, Bull. U.S. Nat. Mus., No. 112, 1921, p.84. "Tillamook, Oregon to Gulf of California in deep water." --- Oldroyd Stanford Univ.. Publ. Geol. Sci., vol.2, pt.1, 1927, p.159, pl.11, fig.6. "Tillamook, Oregon to Gulf of California". -- Eyerdam, Nautilus, vol.51, No.3, 1938, p.101. "Dredged, 15 fms. Elrington, Alaska."

In the original description Dall states "It has the aspect of Admete, in spite of the presence of an umbilicus, but is perhaps only a delicate form of Trigonostoma." Grant and Gale state, (1) "Admete californica Dall may be another variety of (couthouyi). However, neither recognized the true type of Admete. The deep water species, californica, corbicula and io might well be considered to form a distinct group in Cancellariidae.

The shell is described as thin, white with a pale epidermis, the whorls slopingly shouldered, sculptured with equally spaced, low, rounded, axial ribs and spiral cords. The aperture is without canal the umbilicus rather large, in the young relatively smaller, and the columella with three plications. The figure shows the body of the shell to be covered with a wide callus. The measurements are given as, Length of shell, 16; Max. diameter 8.3 mm.

(1) Mem. San Diego Soc. Nat. Hist., vol.1, 1931, p.622.

(1) 45. Massyla (Aphera) corbicula (Dall)

Cancellaria (Merica) corbicula Dall, Bull. Mus. Comp. Zool., vol.43 1908, pp.294,295, pl.1, fig.4, "U.S.S. Albatross stations 2936 off San Diego, California in 359 fms.. Also at stations 4382, 659 fms.; at station 4407, off Catalina Island in 600 fms.; and station 4425, north of San Nicolas Island, in 1100 fms."

Cancellaria (Progabba) corbicula Dall, Bull. U.S. Nat. Mus. 112, 1921, p.83. "Santa Barbara Islands to Coronado Islands". -- Oldroyd, Stanford Univ. Pub. Geol. Sci., vol.2, pt.1, 1927, p.153. "Range. Santa Barbara Islands to Coronado Islands."

The shell is milk white with a thin epidermis, spire short, aperture very large. The whorls are rounded with a narrow, sloping shoulder, sculptured with equally spaced, low axial ribs and spiral cords,

slightly nodulous at the intersections. The umbilicus is closed, the inner lip callous, and the columella has two oblique plaits near the proximal end. The measurements are given as, Length of shell 21.5, Max. diameter 9.5

(1) Merica H. and A. Adams, Gen. Rec. Shells, vol.2, 1854, p.277. Type, C. melanostoma Sowerby. The type does not seem to be closely related to any group of west coast shells.

46. Massyla (Aphera) io (Dall)

Cancellaria io Dall, Proc. U.S. Nat. Mus., vol. 18, 1896, p.14. " U. S.S. ' Albatross' station 3354, in 322 fms., Gulf of Panama".

Cancellaria (Merica) io Dall, Bull. Mus. Comp. Zool., vol.43, 1908, pp.295,296, pl.1, fig.2 (same locality)

Cancellaria (Progabba) io Dall, Bull. U.S. Nat. Mus., No. 112, 1921 p.83 " San Diego (650 fms.); to Gulf of Panama (322 fms.).--

Oldroyd, Stanford Univ. Publ. Geol.Sci., vol.2, pl.1, 1927, pp 152,153

" Range. San Diego in 650 fms. to Gulf of Panama in 322 fms."

Dall states, " This species has much the look of a giant Admete but without the arched pillar. Most of the specimens were eroded and the species has a genuine abyssal aspect". The shell is fusiform, whitish or pink, sculptured with rather stout, rounded axial ribs crossed by numerous spiral threads. The columella has three plaits and the body of the shell a wide wash of callus. The measurements of the type are given as , Height of shell 41, width of last whorl 21 mm.

47. Massyla (Aphera ?) microsoma (Dall)

Cancellaria (Merica ?) microsoma Dall, Bull. Mus. Comp. Zool., vol. 43, 1908, p.296, pl.11, fig.10. " Off Acapulco, Mexico in 660 fms.

Admete microsoma Dall, Bull. U.S. Nat. Mus. No. 112, 1921, p.84.

" North Coronado Island (656 fms.) to Acapulco (660 fms.).--

Oldroyd, Stanford Univ. Publ. Geol. Sci., vol.2, pt.1, 1927, p.157

" Range, North Coronado Island (656 fms.) to Acapulco.

It is very difficult to place this minute, deep water species in any grouping of the family Cancellariidae and it may not belong in that family. Dall states that in the original description " This small species might be referred to Admete if it were not for the absence of concave arcuation of the pillar which is characteristic of that genus, and the presence of a small umbilical chinck."

The shell is thin with a brownish epidermis and tabulated whorls sculptured with a keel at the shoulder and spiral cords on the base, entire surface with strong lines of growth. The columella has two plaits, the anterior of which forms the edge. The measurements of the type are given as, Long. of shell 3/5, Max. diameter 1.8 mm.

Genus Admete Moller

Admete Moller, Index Moll. Groen., 1842 p.15. Type (by monotypy)

Admete crispa Moller , which equals Tritonium viridulum Fabricius, Fauna Groen., 1780, p.402. (Moller in the text ascribes the genus Admete to Kroyer)

As explained by Pilsbry (1) Admete crispa Moller is identical with Tritonium viridulum Fabricius of the north Atlantic fauna and is closely related to Admete couthouyi (Jay) which is circumboreal. Grant and Gale (2), following Dall, give Tritonium viridulum Fabr. as the type of the genus Lora in the family Turridae in which a (3) large group of boreal species are placed. They state that Admete crispa Moller is a minor variety of Admete couthouyi (Jay). Grant and Gale (4) bring the name " Lora " viridula Fabricius into the west coast literature by making Fusus fidicula Gould a synonym. The latter is a Puget Sound species and seems to be a true Turrid, similar in shape and sculpture to viridulum but lacking the

characters of the columella of the genus Admete.

The genus Admete differs from all other groups placed in the family Cancellariidae in having a columella curved instead of straight, shaply, obliquely truncated without terminal plication and with one or more feeble plications on the upper portion, frequently not visible in the aperture. The shell is more or less turrit, without umbilicus, aperture oval, without a distinct canal, and the sculpture is fine and reticulate. There may be some question in regard to placing this arctic genus in Cancellariidae as the type is said to lack an operculum and the radula to be without teeth.

(1) Nautilus, vol. 51, no.4, 1938, pp 115-118

(2) Mem. San Diego Soc. Nat. Hist., vol.1, 1931, p.512

(3) Loc. cit. p.622

(4) Loc. cit. p.514

48. Admete couthouyi (Jay)

Cancellaria buccinoides Couthouyi (Not Sowerby, 1832), Boston Jr. Nat Hist., vol.2, 1838, p.105, pl.3, fig.3. "Massachusetts Bay".

Cancellaria couthouyi Jay, Cat. Shells, 1839, p.77. (new name) --

Gould, Rept. Invert. Mass., 1841, p.283, fig. 190 --- Sowerby, Thes. Conch., vol.2, 1849, p.449, pl.96, figs. 100, 101 "Massachusetts Bay" -- Reeve, Conch. Ic. vol. 10, 1856, pl.18, 86 (same locality).

Admete couthouyi Jay, Dall, Bull U.S. Nat. Mus. No. 112, 1921, p.84, pl.16, fig.7. "Arctic Sea to San Diego, Calif. Circumboreal." -- Oldroyd, Stanford Univ. Publ. Geol. Sci. vol.2, pt.1, 1927, pp 157, 158, pl.16m fig.2 (copies Dall's fig and range. Neither give the locality for the specimen figured. -- Grant and Gale, Mem. San Diego Soc. Nat. Hist., vol.1, 1931, p.622.

Dall in 1921 seems to have been the first to introduce the name into west coast literature. The species is not uncommon along the Alaskan coast. On the New England coast it has been taken at various depths, one record being that of Albatross station 2115, in 843 fms. The San Diego record, if not a misidentification must have been from some such depth. On both coasts the shell is quite variable in strength of sculpture, amount of tabulation to the whorls and presence or absence of plications on the columella.

It was originally described as shell ovate, somewhat turrit, white, sculptured with distinct lines of growth, sometimes rising into folds near the sutures, and coarse spiral threads. The measurements given as Length $11\frac{1}{20}$ breadth $7\frac{7}{20}$ in. (approximately 12 x 9 mm.)

49. Admete couthouyi laevior Leach

Admete couthouyi laevior Leach, Kongliga Svenska Akademis Handlingar, vol.16, 1878, p.43. "Arctic" --- Dall, Bull. U.S. Nat. Mus. No. 112, 1921, p.84 "Arctic Ocean to Sea Lion Rock, Washington." -- Oldroyd, Stanford Univ. Publ. Geol. Sci. vol.2, pt.1, 1927, p.158, "Range - Arctic Ocean to Sea Lion Rock, Washington off San Juan Island, Puget Sound."

This variety seems to be unfigured. It is described as, shell larger than the typical, smoother; suture not as distinct; whorls rounded. The measurements are given as Long. $22\frac{1}{2}$, lat. $11\frac{1}{2}$ mm.

50. Admete middendorffiana Dall

Admete middendorffiana Dall, Proc. U.S. Nat. Mus., vol.7, 1884, p.524, "North end of Nanival Island, Bering Sea" --- vol.24, 1902, p.516, pl 38, fig.6 (same locality) --- Bull U.S. Nat. Mus. No. 112, 1921, p.84 "Arctic Ocean to Alaska to Bristol Bay, Bering Sea." --- Oldroyd, Stanford Univ. Publ. Geol. Sci. vol.2, pt.2, 1927, p.156 (same range)

Dall states "This form is perfectly distinct from A. viridula and may prove to be a Cancellaria. Grant and Gale, under A. couthouyi

The first of the year was a very dry one, and the crops were much affected. The weather was very hot, and the crops were much affected. The first of the year was a very dry one, and the crops were much affected. The weather was very hot, and the crops were much affected.

The second of the year was a very wet one, and the crops were much affected. The weather was very cold, and the crops were much affected. The second of the year was a very wet one, and the crops were much affected. The weather was very cold, and the crops were much affected.

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The fourth of the year was a very wet one, and the crops were much affected. The weather was very cold, and the crops were much affected. The fourth of the year was a very wet one, and the crops were much affected. The weather was very cold, and the crops were much affected.

The fifth of the year was a very dry one, and the crops were much affected. The weather was very hot, and the crops were much affected. The fifth of the year was a very dry one, and the crops were much affected. The weather was very hot, and the crops were much affected.

state, " The form middendorffiana Dall, is a low spired variation." The figure shows a broadly ovate shell with a nearly straight columella and indistinct plaits, sculptured with fine spiral threads and lines of growth which form short axial ribs for a narrow space below the suture. The measurements are given on the list of plates as Altitude 17.5 mm

Admete regina Dall (Nautilus, vol.25,1911,p.16; Bull. U.S. Nat Mus No. 112, 1921, p.84; Range- Arctic Sea to Pribilof Islands) is described as having a deep, narrow umbilicus and the columella with six or more feeble plaits. It seems to be unfigured but the characters above given would bar it from the genus Admete and it probably does not belong in the family Cancellariidae.

Publications Received

Exploration Hydrobiologique du Lac Tanganika (1946-1947)
Volume III, Fascicule 1 Lamellibranches par Eugene Leloup
Volume III, Fascicule 4 Gastropodes "

Institut Royal Des Sciences Naturelles De Belgique.

Two large folio volumes with numerous full page plates.
The fauna of Lake Tanganika is always a matter of interest and speculation because of the many peculiar forms reminding one more of marine species than fresh water.

A Study of Snails and Slugs in East Africa by Bernard Verdcourt.
5 pages, 1 plate, 18 figs.

The Occurrence of a Species of Helicopsyche brevis (Trich., Sericostomatidae) in Tropical Africa by Bernard Verdcourt.
Entomologist's Monthly Mag. 1953.

The cases of this arthropod have been frequently confused with mollusks.

Proceedings of the Malacological Society of London Vol.30, part 6, 20 April 1954. Contents:
Obituary and list of publications of Arthur George Wrigley
The Structure of the ligament of Pedalion (Perna) by E.R. Trueman
A study of the habits of Valvata piscinalis (Muller), and the structure and function of the alimentary canal and reproductive system. By Doreen M. Cleland.
Note on " English Eocene and Oligocene Veneridae" by W.E. Tremlett
Cochlicopa in the British Isles By H.E. Quick

John Fitch, vice-president, called the meeting to order at 7:45PM and welcomed forty-four persons including guests.

Miss Bessie Faulkner, treasurer, announced a paid-up membership of fifty-five and that several of the senior members are still in arrears.

The group was informed by Mrs. Rose Burch that the Chaces have been appointed as curators of Conchology at the Museum of Natural History in San Diego.

As previously announced, the AMUPD meeting will be held June 18th and 19th at Founder's Hall located on the campus of the University of Southern California.

Mrs. Mary Turver reminded all interested that the banquet will be held Saturday June 19th at "Carl's" on the corner of Figueroa and Flower. We will meet at 6:30 PM and dinner is to be served at 7:00PM.

The Harry Turvers reported good collecting at Puerto Penasco even though the Mexicans are collecting heavily for the commercial markets.

Our speaker of the evening was Dr. S. Stillman Berry of the University of Redlands. The paper he had prepared was on "The Argonauts and their relatives".

Dr. Berry explained that his speech was originally given at the AMU several years ago and that he was speaking from the same paper due to the request of several members of this club. As he explained, there were additions and revisions made to the original.

Although these animals have been known for hundreds of years, it wasn't until 1845 that male animals were taken. Much remains to be known about this family as of today. For example; the means of reproduction are still to be answered along with questions as to their life-span.

After waiting forty years for material to work with, Dr. Berry has done extensive research on Argonauta nouryi Lorois 1852. This is quite unusual in that this, the second rarest species in the world should be so well represented in the speaker's collection.

Dr. Berry illustrated his paper with preserved specimens as well as egg cases of several species. Pictures and rare antiquarian books were also brought by the speaker for the enlightenment of the group.

I'm sure that all present had the opportunity to learn something about this family that they were not previously aware of as Dr. Berry is recognized as an expert in this field.

Mr. Fitch adjourned the meeting at 10:00PM to allow the group to further examine the material that the speaker brought to illustrate his paper.

D.L. Burford, Secretary

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JULY 1954

CONCHOLOGICAL
CLUB OF SOUTHERN
CALIFORNIA

The American Malacological Union- Pacific Division, held another very successful meeting with members present from Canada to San Diego. We have every reason to be proud of the serious work being done by our members.

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We are now meeting the first Tuesday of every month at 7:30 P.M. at the Los Angeles County Museum, Exposition Park, Los Angeles, California. All interested persons are cordially invited.

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page 10 of 100. All the other pages are blank. The only text on this page is the page number 10, which is located in the top right corner. The rest of the page is empty.

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1954
MEETING
THE AMERICAN MALACOLOGICAL UNION
PACIFIC DIVISION

FOUNDERS HALL, UNIVERSITY OF
SOUTHERN CALIFORNIA, LOS ANGELES.
JUNE 18, 1954

PACIFIC DIVISION OFFICERS
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VICE-CHAIRMAN*- R. RALPH FOX
SECRETARY-TREASURER*- MISS RUTH L. COATS

SPECIAL COMMITTEES
REGISTRATION*- MRS. ROSE BURCH
PROGRAM*- HARRY R. TURVER
ANNUAL BANQUET*- MRS. HARRY R. TURVER

PROGRAM
FRIDAY, JUNE 18

8:00. Breakfast, University Cafeteria.
9:00. Registration of members and guests.
9:30. Meeting called to order by chairman, Mrs. Elsie Chace.
Appointment of nominating committee.
Announcements.

PRESSENTATION OF PAPERS

Mr. Lindsay Winkler, Hancock Foundation, U.S.C.

"Remarks on a new Aplysia from Southern California".

Dr. Lois W. Wong, School of Tropical and Preventative Medicine, Loma Linda, California. "Factors influencing egg laying in Oncomelania, snail intermediate host of Schistosom a japonicum."

Intermission

Dr. Stillman Berry, Redlands, California. "The distribution, past and present, of Cryptochiton". (By S. Stillman Berry & Carl L. Hubbs.)

12:00. Luncheon.

Dr. F.T. Nutton, Hancock Foundation, U.S.C. "A preliminary report on the quantitative survey of molluscan communities in the San Pedro Basin area."

Mr. M.F. Chace, Pomona, California. "Aulica californica. A discussion of its taxonomic position."

Intermission.

Mr. Chester Wong, School of Tropical and Preventative Medicine, Loma Linda, California. "The response of Oncomelania to various types of light and lighting conditions."

Mr. John C. Burch, Los Angeles, California. "A new form, Aulica imperialis Lamarck."
6:00 Dinner.

FRIDAY EVENING

Mr. Robert Robertson, Stanford. "Systematics of the Conidae".

Dr. S. Stillman Berry, Redlands. "Importance of the large pyramidellid elements in the West American fauna."

Marine Life Motion Pictures, Seashore Oddities.

SATURDAY, JUNE 19

8:00 Breakfast, University Cafeteria.
9:30 Announcements.

SATURDAY, JUNE 19 (CONT.)

9:30 (cont.) Business Session.

PRESENTATION OF PAPERS.

Mr. E.P. Baker, Downey, California. "Interesting others in marine life".
 Dr. S. Stillman Berry, Redlands, California. "On the genus Ocythoe, relative of the argonaut, in California waters". "Vitrinella williamsoni Dall"
 Group Picture.
 Luncheon.
 Dr. Tron Soot-Ryen, Hancock Foundation, U.S.C. "Characteristics used in the classification of West American Mytilids."

SYMPOSIUM ON MOLLUSCAN ECOLOGY.

Mr. Ralph O. Fox, Berkeley, California. "Sandy Beaches."
 Mr. E.P. Chace, Lomita, California. "Rocky Beaches".
 Dr. S. Stillman Berry, Redlands, California. "Tidal Flats".
 Mr. William K. Emerson, Museum of Paleontology, University of California, Berkeley. "Aspects of Discontinuous Distribution".
 Dr. Wendell O. Gregg, Los Angeles, California. "Finding snails in the desert".
 Dr. A. Myra Keen, Dept. of Geology, Stanford University. "The brackish-water Cardiacea".
 7:30. Annual Banquet, at Carl's, Figueroa & Flower.

Members in attendance at AMUPD meeting- - June 18-19, 1954.

1. Mrs. John Q. Burch, 4206 Halldale Ave.
2. Harry S. Turber, 8640 Evergreen St.
3. Mary E. Turber, 8640 Evergreen St.
4. Florence Thurlow, 245 Market St., Venice
5. Maye Thurlow, 245 Market St., Venice.
6. Lela M. Griffith, Egmont, B.C., Canada
7. Elaine Griffith, Egmont, B.C., Canada
8. Lucille Zellers, 714 Elm St., El Cerrito
9. Wm. K. Emerson, University of Calif., Berkeley
10. Mrs. R.G. Beck, 422 So. Vine St., Escondido, Calif.
11. Mr. R.G. Beck, 422 So. Vine St., Escondido, Calif.
12. Mr. Andy Sorensen, Pacific Grove, Calif.
13. Phil Spicer, Centralia, Washington.
14. Angel Spicer, Centralia, Washington
15. Carolyn S. Strohbeen, Santa Cruz, Calif.
16. Carl I. Thomas, Orange, Calif.
17. Robert Talmadge, Willow Creek, Calif.
18. John P. Strohbeen, Santa Cruz, Calif.
19. Elsie Chace, Lomita, Calif.
20. Ralph O. Fox, Berkeley, Calif.
21. Ruth Coats, Carlsbad, Calif.
22. Ray Summers, 218 Abbie St., Apt. C., Pleasanton, Calif.
23. George P. Kanakoff, L.A. Museum
24. Helen Rost, Allen Hancock Foundation U.S.C.
25. T. SootRyen, Hancock Foundation U.S.C.
26. Myra Keen, Stanford University, Calif.
27. S. Stillman Berry, Redlands, Calif.
28. N. Mattox, U.S.C.
29. John Q. Burch, 1584 W. Vernon Ave. Los Angeles, Calif.
30. Paul H. Steele, Box 935, Sacramento, Calif.
31. Lindsay R. Winkler, 1141 W. 47, Los Angeles, Calif.
32. E.P. Chace, 24205 Eshelman, Lomita, Calif.

(cont.) Members in attendance at AMUPD meeting- June 18-19, 1954.

33. Kenneth A. Althans, 319 East 110th St., Los Angeles, Calif.
34. Bessie Falconer, 236 Bailey St., Los Angeles, Calif.
35. Lois W. Wong, School of Trop. Med., Loma Linda, Calif.
36. Mrs. Calrice Seldomridge, Port Angeles, Washington.
37. Chester Wong, School of Tropical Med., Loma Linda, Calif.
38. Ralph Bormann, 4331 Vermont St., Long Beach, Calif.
39. Mary Bormann, 4331 Vermont St., Long Beach, Calif.
40. Mrs. Robert Alexander, 4759 Valencia Dr., San Diego, Calif.
41. Robert Alexander, 4759 Valencia Dr., San Diego, Calif.
42. Mrs. Crawford N. Cate, 12719 San Vicente Blvd., Los Angeles, Calif.
43. Crawford N. Cate, 12719, San Vicente Blvd., Los Angeles, Calif.
44. A. Howard, 6427 Eylise Ave., Rivers, Calif.
45. Tita Schafer, 1305 Mt. Vernon Dr., San Gabriel, Calif.
46. Patrick Milburn, 425 Iris Ave. Coronadel Mar, Calif.
47. Mrs. G.E. MacGinitie, 101 Danbra St. Corona Del Mar, Calif.
48. Henry Chi, 1335 Lemoyne St., Los Angeles, Calif.
49. Russell Woglum
50. Mabel Woglum
51. Gil Grau
52. Howard Fletcher
53. Eva Maye Fletcher
54. Ruth C. French, 1148 W. 11th St. San Pedro, Calif.
55. Edward Baker, 116195 Downey Ave. Downey, Calif.
56. Irene Baker, 116195 Downey Ave. Downey, Calif.
57. Mickey McGaughy, 5667 Baltimore St. Highland Park, Calif.
58. D.L. Burford, 4241 Jackson Ave. Culver City, Calif.
59. W.O. Gregg
60. S.J. Inglis, 215 So. Washington Ave., Whittier, Calif.
61. Helmut Meier, Rte. 2 Box 940, San Marcos, Calif.
62. Mrs. Helmut Meier, Rte. 2 Box 940, San Marcos, Calif.
63. Marilee Hall, 1018 N. Nevada St., Oceanside, Calif.
64. Roy Edward Hall, 1018 N. Nevada St., Oceanside, Calif.
65. M.L. Walton, Glendale, Calif.
66. Mrs. M.L. Walton, Glendale, Calif.
67. Mrs. Mattox, Los Angeles, Calif.
68. Mrs. D.L. Burford, Culver City, Calif.
69. Mead French, San Pedro, Calif.
70. Mrs. George Kanakoff, Los Angeles, Calif.
71. Mr & Mrs. E.W. Ulrich, Long Beach, Calif.
72. Mr. J.W. Rhodes, South Gate, Calif.

Communication from Mr. A. Hyatt Verrill

" Professor Emerson of the University of California has called my attention to the fact that the name Voluta ornata has already been used, and I will have to change the name of my shell that was described in Minutes 132, page 9, Oct., 1953. The new name will be Voluta margaritana.

A New Form of *Aulica Imperialis* (Lamarck)

By John Q. Burch

The current issue of Systematic Zoology, March, 1954, contains a paper by Dr. J. Gordon Edwards of San Jose State College entitled; "A New Approach to Infrspecific Categories". It is a thorough and thought provoking discussion in which the author views with alarm the tremendous accumulation of relatively unimportant subspecific names, (all under present rules being governed by the Law of Priority). It is doubtful if any other group are more concerned than students of mollusks. Of course, you may say that systematic workers quickly disregard the names given to useless color forms, abnormal individuals, freaks and the like, but can they be disregarded? One concrete example will suffice. When Allyn Smith and Mackenzie Gordon decided that the southern form of the species we had known as *Murex carpenteri* was distinct from the type form of Monterey, (whether they are or not is beside the point the southern form was apparently left without a name. However, Hemphill had described a useless color variety of this species, and by the Law of Priority Hemphill's name had to be given specific rank. The names of all subspecies are now protected by the Law of Priority.

It is not suggested that workers be more reluctant to describe any variant that comes to their attention, but that they be more disposed to use the term "forma" or the like, in which case the name may still be used by systematists and not enter the record as a subspecies. Under the present International Rules a trinomial name is not considered a subspecies unless so stated by the author.

A study of a large series of specimens of *Aulica imperialis* (Lamarck) from Zamboanga, Philippine Islands, indicates that there are at least two or more distinct forms. The more abundant form is that figured by Sowerby, Monograph of the Genus *Voluta*; Kiener, Genre *Volute*; Chenu, and others. Specimens which may be considered the typical, match these figures perfectly both in shape and in the markings composed of chestnut brown blotches and zig-zag lines usually forming two wide poorly defined bands on the body whorl, internally orange yellow etc.

One of the other forms of this species seems to be very rare in comparison to the typical. But one specimen was received over a period of several years out of several hundred specimens of the more common form. This was naturally noticed and the collectors in Zamboanga asked, to see if more could be found. The result has been that several additional specimens have been received. In the meantime we received a letter from Dr. A.H. Cahn, now located in Tokyo, Japan, in which Dr. Cahn commented upon this form and sent us a photograph of three specimens, one of the new forms and two of the typical. Oddly enough, the photographs make apparent certain differences in shape at first not as obvious in the shells themselves.

It is possible that this may be a distinct species or subspecies. It is certainly a form easily separable from the typical and should have a name for the convenience of collectors and students of the group. However, the writer here is disposed to consider it a form or race rather than a separate biological entity. It is named in honor of Mrs. G.P. Robinson who recognized and sent the specimens from Zamboanga. *Aulica imperialis* (Lamarck) forma *robinsona*.

This variety differs from the typical in the following particulars: the shell is more triangular in shape, the maximum width being across the shoulder at the posterior of the body whorl whereas the maximum diameter of the typical seems to be invariably near the center of the body whorl; the ground color is much lighter, closer

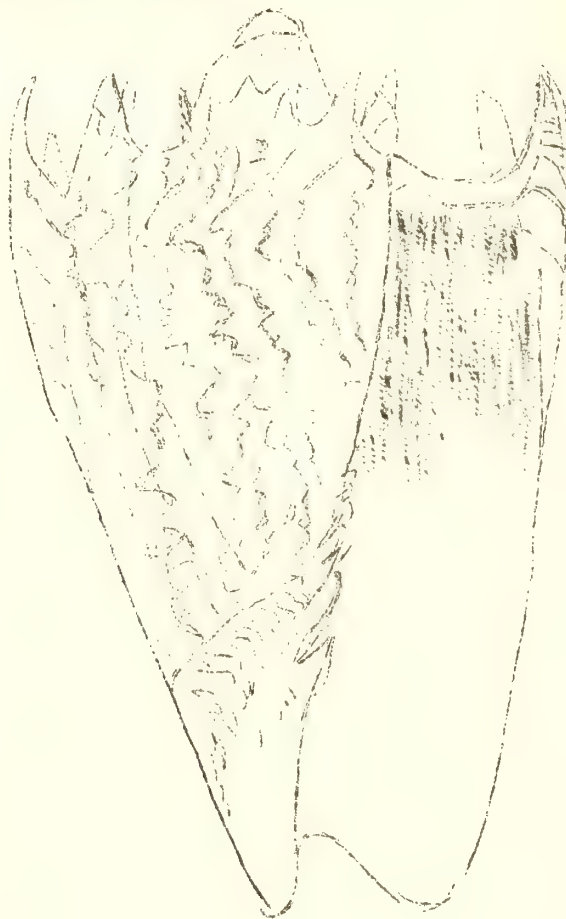
(New Form, *Aulica Imperialis*, continued)

to a pink tinged ivory; the markings lack the heavy brown splotches and are composed almost entirely of fine vertical zig-zag lines; the large hollow spines at the periphery are not as incurved as those on the typical and on some specimens actually curve outward. Measurements of type specimen: height $7 \frac{3}{4}$ inches, diameter of body whorl at shoulder $5 \frac{1}{2}$ inches, diameter at center of body whorl $4 \frac{1}{2}$ inches, diameter at base of body whorl $2 \frac{1}{2}$ inches.

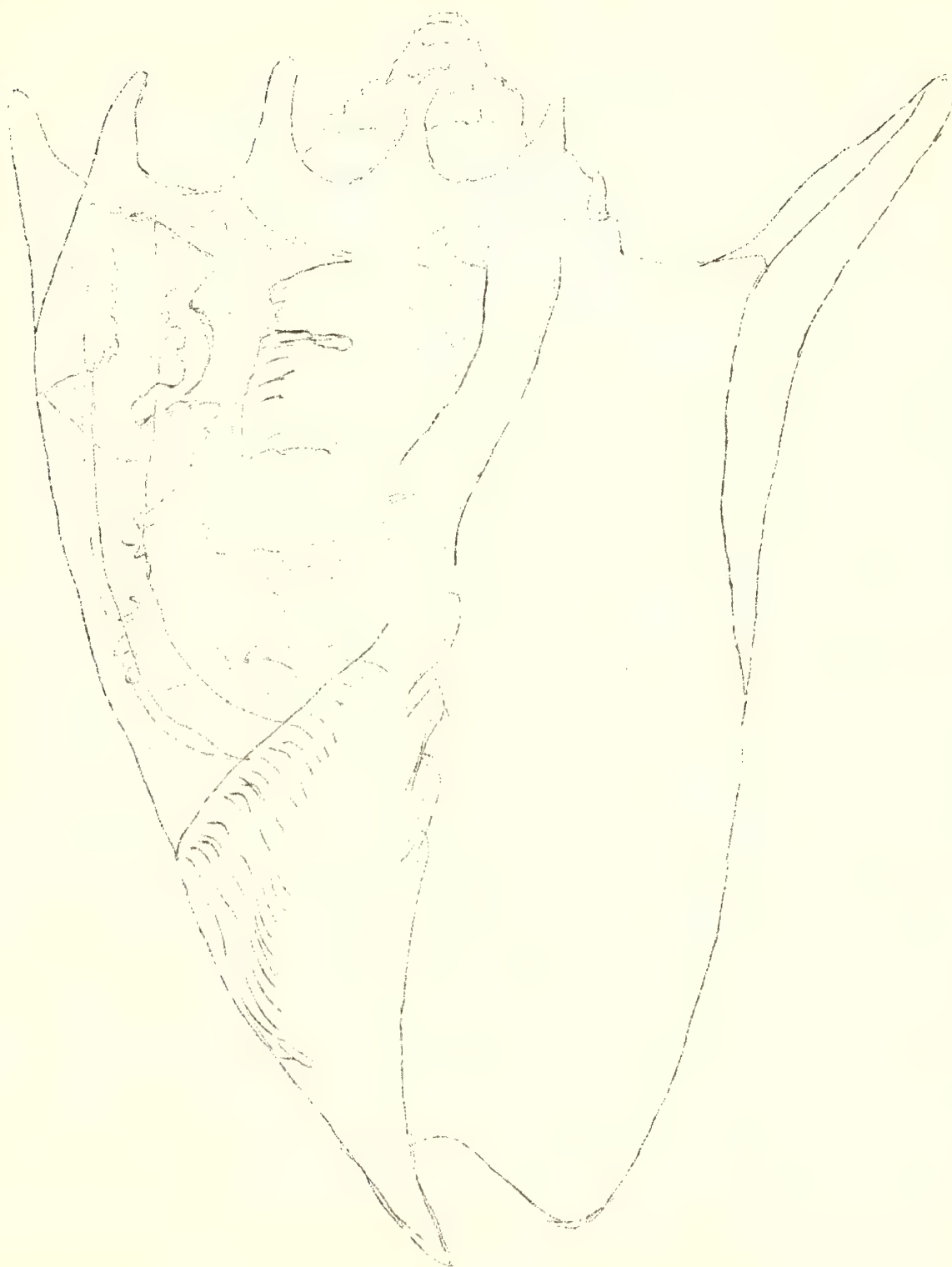
It should perhaps be mentioned that the light color and line markings are closely approached in many specimens of the typical in shape.



Aulica imperialis (Lamarck)
(typical)



Aulica imperialis forma
robinsona



Aulica imperialis forma *robinsona*

Type Specimen

Mr. Andrew Sorensen of Pacific Grove, writes: Now that the subject of Haliotidea has come to the fore, the following copy of a letter written in 1916 by the late Dr. Harold Heath, noted anatomist, who was the first director of Hopkins Marine Station at Pacific Grove, should add to the general knowledge. Please note that Dr. Heath mentions the short time an abalone larva swims before settling to the bottom. This no doubt is the reason why abalones do not cover a wider distribution.

Abalone

With what has been done in France and here in California (to July 1916), it is possible to make out something.

We have no complete data regarding the age of the abalone, but the Japanese divers claim that the largest they get on the average are from 10-14 years old. I am inclined to think they are correct, and furthermore I think they commence to breed when six or seven years old. The largest females lay at least 2,000,000 eggs.

In the sketch, the reproductive gland is on the "horn" and is green in the female and cream colored in the male. A cross section of the "horn" shows the eggs or sperm forming a layer about the brown liver forming a central core.



The breeding season commences the latter part of March and lasts about a month. Eggs and sperm are thrown out into the water where fertilization and subsequent development takes place.

I don't know that you care anything about the anatomy of the beast, but there are some peculiar features likewise found in the ordinary and keyhole limpets. It is the cavity in which the heart is found. L, R are the left and right kidneys which open on one hand into the pericaridal or heart surrounding spaces and on the other hand open into the slit-like mantle cavity in which the gills are held and so outside the body. The reproductive gland pours its products into the right kidney through which they journey to the outside.

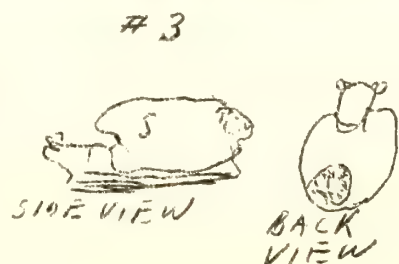
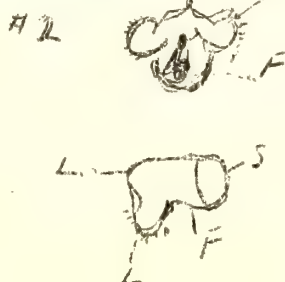
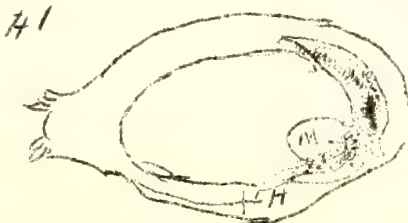
Judging from closely related species the abalone probably has a shell when 72 hours old and looks something like this:

Top sketch from underside; bottom sketch from side. It is now a free-swimming organism being driven about by vibrating hair-like processes on each side of the mouth and on delicate flaps. The mouth is shown as the spot above the foot (F). (L) is a waving lash which enables the animal to make its way about, like a blind man with a cane. The shell is a delicate horn-like cap on the back, no lime in it as yet. After swimming about for a week or so it settles to the bottom. The flaps and lashes (V) become absorbed; the last (L) falls off. The final head forms, the final shell with lime begins, and the animal at the end of a month looks something like this:

The stippled part of the shell is the so called protoconch that protects the larva. It usually falls off or is worn away as the final shell increases in size. At the stage sketched the first hold is only partly formed, appearing as

Side view Back view a notch in the front of the shell. The abalone has now all the features of the adult and does little but grow hereafter.

The life history of the abalone is probably the most important of any living gastropod, for many theoretical and technical reasons. Some of the French believe that Pleurotomaria is the most ancient living gastropod, but there is nothing as far as I can see that indicates that it is a bit older than the abalone. The genus Haliotis appears far back in geological history, and is hoary with age so that I am most anxious to learn more about it.



MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA. JULY 6, 1954

John Fitch, vice-president, called the meeting to order at 7:45PM and welcomed members and guests alike.

Miss Bessie Faulkner, treasurer, noted a paid membership of fifty-nine. This is an increase of four over the number carried at the closing of last year.

Harry Turver announced that the Hancock Foundation was responsible for three of the papers given at the recent meeting of the AMUPD and has promised to give a complete report of the programs for the benefit of those unable to attend either of the sessions.

Dr. and Mrs. Howard have asked that we be their guests at a pot-luck Sunday afternoon, July 18th. The address is: 6427 Eglise Street, Whittier.

Our speaker of the evening, Dr. Bruce Halstead, M.D. of the School of Tropical and Preventive Medicine at Loma Linda, California, was introduced by Mr. Fitch. The subject as announced, "Venomous and Poisonous Mollusca", was broadened to include other than molluscs.

The years covering the war in the Pacific and those thereafter, brought about a large increase in the number of cases of fish-poisoning.

The Japanese, with a death toll of some 500 troops, were the first to begin extensive research into this field. However, this was not a new problem with the Japanese, for they had several hundred years ago, posted laws announcing severe punishment for the consumption of species known to carry this deadly poison.

Cap't Cook in accounts of his voyages, noted that several crew members were afflicted by eating fish infected by these strange and unknown poisons.

To go back even further, Moses advised against eating fish without scales. This rule of thumb measurement is still used by our government in survival manuals and strangely enough, eliminates most of the species of fish that cause these illnesses.

Although most cases on record are confined to the tropics and areas consuming fish imported from the torrid zones, there are instances of these outbreaks noted from the Arctic regions with humans as well as dogs being stricken.

Even in the tropics, the distribution is spotty and no one species has been found to be 100% poisonous. However, some species will be as high as 90% contaminated. Specimens of a species from one side of an island will be safe for consumption while those on the other side will be deadly.

As much of the diet of inhabitants of the Pacific come from the sea, it is easily understood that authorities are seriously disturbed by this growing problem. It is not being contained, but is instead, spreading eastward toward this continent. Serious as it is now and becoming worse steadily, it could very easily interfere with the economic development of the Pacific.

Fish poisons react on the nervous system and was demonstrated in a short film showing the reactions of laboratory subjects to eating samples known to be poisonous. Reflexes were slow if not entirely absent. Extreme weakness, respiratory paralysis and abdominal breathing are also visible symptoms. Convulsions followed by death often result, as the medical profession knows of no antidotes as of now.

Little or no research has been done with many of the types of marine life known to be poisonous to man. Sponges, cones, sting-rays, fish and other forms of life are known to be so affected. Some of these are so deadly that death will result in minutes. In fact, these poisons are the most virulent known to man, including the common inorganic types.

Dr. Halstead believes that diet is responsible for the poisons to be found in fish and that types of algae are partially to blame. The increased amount of shipping due to the war, has undoubtedly seeded the new areas of infection to be found since 1942.

Sting-Rays were noted as having true venom organs and their barb can be milked to produce this venom. Incidentally, this poison acts on the heart.

Dr. Halstead has done considerable work on the poisonous cones and made several interesting discoveries. All cones have venom organs consisting of hollow teeth; modified radulla. A gland is also present to refine this poison.

The slides of the poison system clearly show the harpoon-shaped teeth and their high degree of development. These are grown in a three-compartmented sheath and have no direct connection with this sheath. The small poison sac attached to the anterior end of the tooth is filled by permeation as no direct attachment to the rest of the animal is to be found. When needed, these teeth are launched like harpoons through the muscular proboscis. And, like true harpoons, these teeth are complete with holding barbs.

We can possibly look forward to more about the topic of the speaker, as John Fitch is to go on a field trip to the Marshall Islands later in the year. Incidentally, we should congratulate our vice-president and program chairman for an interesting program and would like to see Dr. Halstead return again soon.

D.L. Burford, Secretary

Mr. John Fitch, as of July 15, 1954, will be Assistant Director of the Bureau of Marine Fisheries Laboratory, Terminal Island, California.

SELLING IN CALIFORNIA

Those who cherish the old 'laissez-faire' system of political economy (defined in Century dictionary as "The principle of letting people do as they please"), may shout their complaints, but it seems that if they dislike taking out a permit and paying the legal taxes their only alternative is to change the laws of the state.

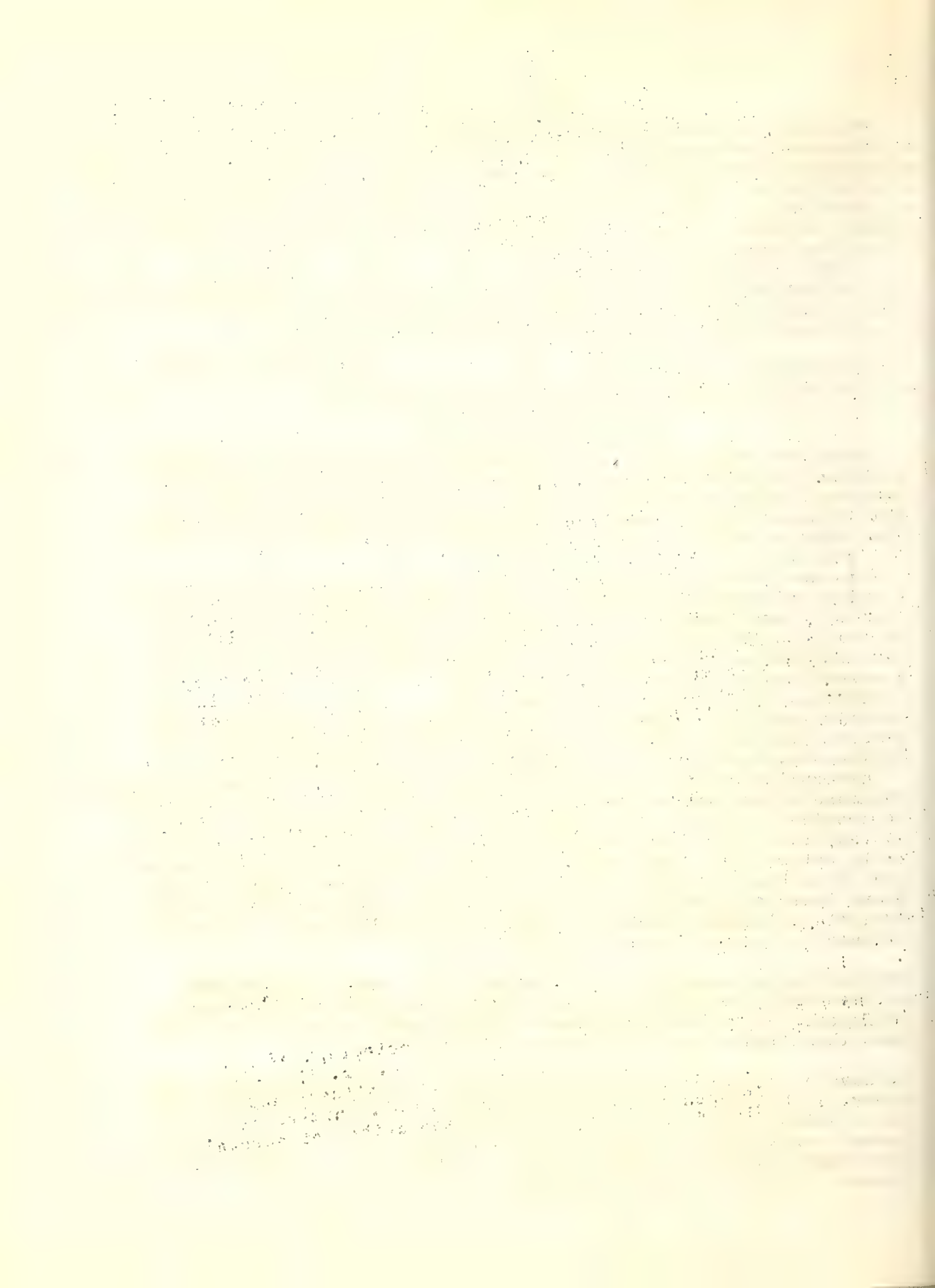
This was rather forcibly brought to my attention recently when a friend of mine who had been a great book collector (not in my line of books) came to some financial difficulties and decided to sell his library. The idea that an individual could not sell his own library to those of his friends who wished to buy without a permit had simply not occurred to him.

However, the ruling of the State Board of Equalization is very briefly that "Any person making more than two retail sales in any one fiscal year must take out a permit and pay the state of California, the city of Los Angeles et al their legal tax.

This ruling may well be particularly skocking to the many hobbyists who make a practice of selling to each other, but really the cost of a sales permit in such cases is I think a mere dollar or so, and the tax in the city here is 3% to the state and 1% to the city. It is not really burdensome to obey the law other than that some kind of a bookkeeping record should be kept for the audit of the state Board of Equalization, and of course, all profits should be subject to inquiry by the auditors of the Collector of Internal Revenue for income tax.

We heard with regret of the illness of Dr. Hubert G. Schenck of Stanford University but for a number of years with the army in Japan. He is being returned to California where it is hoped that the climate here will hasten his recovery.

We have a newspaper article with rather a good photograph of Dr. Henry C. Shetrone of Ohio and his shell collection. Dr. Shetrone is an enthusiastic collector and student of Recent mollusks and favors certain groups including the Pectinidae. Dr. Shetrone's life work has been in archaeology, and he is the author of several classic books including "The Mound-Builders".



MINUTES 141

AUG-SEPT 1954

CONCHOLOGICAL

CLUB OF SOUTHERN

CALIFORNIA

Subscription \$2.50 per year

We are now meeting at the Los Angeles Museum, Exposition Park, Los Angeles, Calif. the first Tuesday of every month at 7:30 P.M.
All interested persons are cordially invited.

Please mail all news to your editor, John Q. Burch,
1554 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax 3-5710
Home Phone Ax 2-7967

We are pleased to learn that Dr. Howard R. Hill will represent the West Coast at the annual meeting of the A.M.U. at Durham. It is to be regretted that so few of us find it possible to cross the continent to attend the meetings of the other groups.

Several years ago the writer picked up a juvenile Haliotis cracherodii Leach, on the beach at Corona del Mar, Orange County, California, that was so oddly formed, it was considered a mutation and so cataloged in the collection. In 1953 a series of H. cracherodii from northern Baja California was examined and a number of the same expanded depressed shells were noted. There were just too many shells with the same characteristics to be classed as a mutation, and as inquiries on the flat Cracherodii were sent out, the answers and specimens for examination indicated that there was a distinct form represented. In 1954 the writer obtained several additional specimens with the soft parts for dissection. The results indicate that there is a more or less common form found off the coast of Southern California and northern Baja California, that for detailed study should have a name to clarify the situation. Therefore the writer proposes the following form name, Haliotis cracherodii form expansa. Shell: strongly depressed and nearly circular, with the right lip expanded in a flat plane outwardly and posteriorly around the spire. In juvenile shells this expanding lip forms a prominent fingerlike process that curls around the spire. This expanded portion makes the spire more centered than in typical cracherodii. The dorsal surface is smooth except for a few obsolete striae that are generally eroded away. The ventral surface is smooth with a small muscle scar developing in adult shells. The siphonal openings number from six to nine, with an average of seven. Color: The dorsal surface may be black, greenish black, greenish, brownish, or any combination of the above either as a bicolor or banded to some degree. The nacre is silvery with washes of pinkish and greenish, senile specimens having the colors more intense and localized with the usual dark stains. Animal: Seven of the expansa were compared with seven cracherodii of like size. It was found that the foot of the expansa was darker, being a tan to light brown instead of cream or off white. The mantle of the expansa was black with olive drab maculations that were in turn splotched with black, whereas in the typical cracherodii the mantle is entirely black. The gill of the expansa is narrower (.80) and more finely feathered. The radula is quite variable (.60 to .90) but always narrower with the rasp like teeth larger in ratio. Range: From Punta Pietra in Baja California north along the coast to Redondo Beach, Los Angeles County, California (D.M. Burford Collection). Found in Zone 4 and deeper. For type in Talmadge Collection #1223, Willow Creek California. Max. Dia. 145mm, Min. Dia. 125mm. Alt. 40mm. Type locality, Corona del Mar, California. -a. Discussion: The persistent difference in shell and animal seem to indicate that expansa is passing through a stage to finally become a distinct subspecies. It has the color phases associated with the rosea Orcutt and splendidula Williamson. The shell passes through the various growth and metamorphic changes but all the time being separable from the typical cracherodii by shape and animal. It is not distinct enough to be called a full species, and as both typical cracherodii and expansa occupy the same reef, with only a separation in depth, a form name is all that may be applied. This name expansa is proposed due to the expanded shape, and to simplify by a single word the various characteristics that separate the expanded circular flat Haliotis cracherodii from the more typical forms. Robert R. Talmadge, Willow Creek, California. (Ref. Tyron and Pilsbry, Manual of Conchology Vol. XII, ACSP 1890. Bartsch, The West American Haliotis, Proceedings USNM Vol. 89 #3094, 1940. Ricketts and Calvin, Between Pacific Tides, Rev. Ed. Stanford Press 1948.

Personal Communication from Robert L. Talmadge.

Dear John:

Back in Willow Creek a month now, and have all the material that we gathered cataloged. I am now working over the status etc. of this material. I dug up all the data on the shell, soft parts, range etc. that I had down on the flat expanded Black Abalone, and here is the result.

I am utilizing the term form, as there is not a distinct enough difference to be full specific. The fact that both the typical cracherodii and the expansa are on the same reef, separated by depth alone would make a subspecies difficult to sustain.

(Talmadge letter cont.)

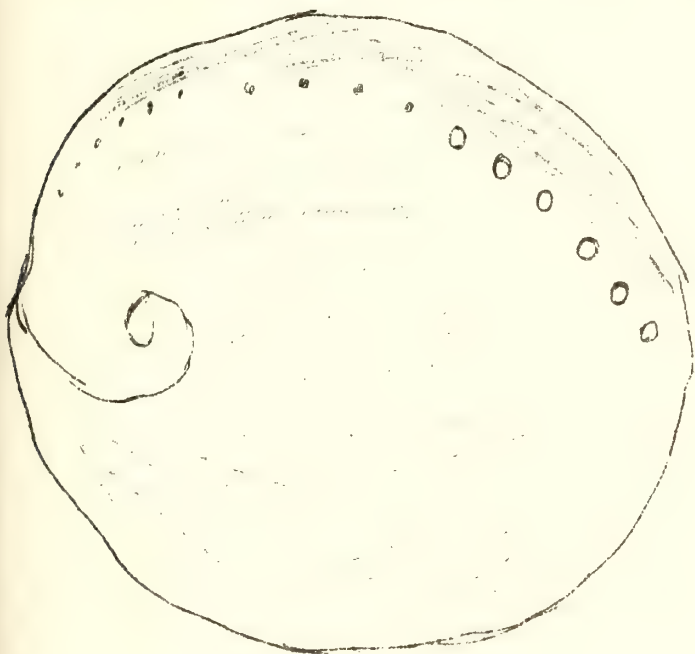
However, the difference in both shell and animal indicate that this is a strong form, near subspecific status.

My own interpretation of form is a pathological mutation, a color phase, or extreme metamorphic age variations. A race or geographical race in my terminology is a subspecies.

It might be of interest to the ones that are studying the Haliotidae to hear that another specimen of the Haliotis rufescens color form hattori Bartsch showed up. This is a juvenile shell that is almost all greenish, far more than typical. It is evidently a rather rare color form, and would probably not go into the reddish or typical phase until much larger, as the lip is still green.

I thought the paper contributed by A. Sorenson interesting in your last Minutes. The smallest calcium shell that I have in the collection is a H. midae Linne that is 3 x 2 mm, and one 3 x 3 mm, but they are perfect shells.

Give Rose my regards and pass the word out among the many collector friends that I know that I enjoyed the meeting and hope that I can make the next one too.



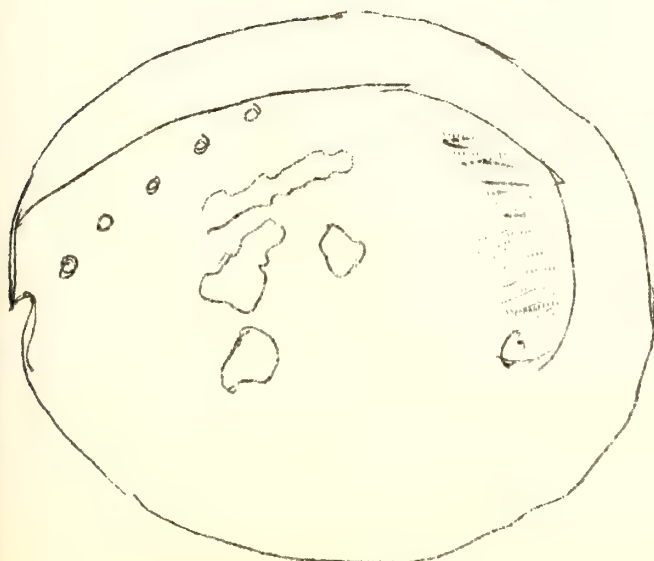
1. Dorsal surface



5. Ventral



2. Profile



3. Ventral surface



4. Dorsal

Expanding
process around spire
in juveniles

The Nautilus- Vol. 68, No. 1, July, 1954 Contains the following papers: Note on the Flying Behavior of Certain Squids by George F. Arata Jr. Mr. Arata is a new author to my experience but this is an extremely interesting paper and I have enjoyed reading it. May we hope to have more of this writers work. I do not know where he may be located or working but his work is good.

Notes on Mexican Mollusks . L: Durango, Coahuila and Tamaulipas, with Description of Two New Humboldtiana by Alan Solem. This is an excellent paper and well illustrated with an entire page of figures. The inclination of all of us with large series of Mexican land shells is to check and see if we may have these species. Unfortunately the author of this paper sees none in his collection and hopes to add them, and may he add that the very fact that they are not present indicated that these species are not common.

A Long Forgotten Shell, *Delphinula laxa* Say. Dr. Pilsbry has written a scholarly paper on a species that will be so extremely rare if indeed extant but few of us will ever be concerned.

Marine Shells From Ohio Pre-Columbian Burial Mounds by Dr. Henry Shetrone. A fine paper on ethno-conchology and no author could be better qualified to write such a paper.

Collectors Items from Commercial Fishing Gear by Lela M. Griffith. This is an extremely interesting paper of some seven pages. The many rare shells brought up by fishermen off Vancouver and British Columbia is amazing. The many extremely rare species from our coast may well enthrall others to interest their friends who are fishermen. Be assured that Mrs. Griffith mentions many species that are almost unknown in West Coast collections.

Notes on Texas *Bulimulus* by Frank L. Simmons . This is an excellent paper on some very rare land shells of Texas. While Texas is my old home state I hasten to admit my inability to discuss the species mentioned.

Mesodon thyroidus (Say) in Florida by William J. Clench. That this is an unusual locality we are assured by Dr. Clench.

The Mollusks of Brown County, Wisconsin by Margaret C. Teskey. A very interesting list of the land and fresh water mollusks of this locality.

A New Species of *Triodopsis fallax* (Say) by Leslie Hubricht.

A new species carefully described with the usual fine work of Mr. Hubricht.

b The Land Snails of Henrico County, Virginia by John Bayard Burch. I regret my inability claim any relationship to the author of this excellent distributional discussion.

Venus- The Japanese Journal of Malacology- June, 1954-

On Some Japanese Mollusca Described by A. Adams & Whose Specimens are Deposited in the Redpath Museum of Canada by Tokubei Kuroda and Tadashige Habe. This is a careful and detailed account of the species discovered in the Redpath Museum by Dr. Katherine V.W. Palmer. The number of the Adams types of Japanese shells is rather amazing, covering 16 full pages.

Review of the Known Species of Japanese Turridae (2) by Katura Oyama. The fact that many of the Japanese species fall into the same genera with some of our West Coast species make this a paper of special interest to us.

On the Development of *Loripes pisidium* (Dunker) with Special Observation on the Ova Masses by Choe Sang

Notes on Spermatozoa of *Ostrea gigas* Thunberg and *O. rivularis* Gould by Yataro Tanaka. Of passing interest because we have on our coast *O. thunberg* introduced by what is *O. rivularis* ?

this coast a large commercial industry in this species from seed imported regularly from Japan.

On the Holes of the Clam Shell (*Venerupis semidecussata*) bored by a Screw-Borer (*Natica maculosa*), with Notes on its Radula by Tataro Tanaka. * The generic allocation of this species of *Venerupis* is interesting. The species is now well established in Puget Sound and elsewhere on this coast. It was originally introduced with seed oysters from Japan.

Carbonic Anhydrase in the Fresh-water Mussel (*Hyriopsis schlegelii*) and Physiological Significance of the Enzyme by D.K. Kawai

Detection of Calcium in Molluscan Mantles: III Smaller Fresh-water Bivalves in Lake Biwa, and *Anodonta iwakawai* and *Unio margaritifera* in Hokkaido.

An Hitherto unnamed West American Ark-Shell By S. Stillman Berry Leaflets in Malacology Vol. 1, No. 12, July 1, 1954. The new species is *Barbatia* (*Acar*) *rostae* The type locality is Mazatlan, Mexico.

A New *Kelletia* from the Pliocene of California by George P. Kanakoff of the Los Angeles Museum- Bulletin of the Southern California Academy of Sciences- Vol. 53, Part 2, May-Aug., 1954. The new species is *Kelletia vladimiri* . It is an excellent paper prepared with the customary thoroughness of Mr. Kanakoff. 3 plates, 5 figures.

The Molluscacidal Activity of Some Surface Active Agents by B.J. Jaskowski, The Creighton University, Omaha, Nebraska. from the Wasmann Journal of Biology.

An Ecological Survey of the Castro Creek Area in San Pablo Bay by Francis P. Felice, University of San Francisco- from the Wasmann Journal Vol. 12, No. 1, Spring, 1954. * This is a very interesting paper of 24 pages, maps and data. The effects of waste pollution on the molluscan fauna is discussed at length and is interesting.

Les " N'Zimbu " Monnaie du Royaume de Congo par le Dr. Edmond Darteville , Conservator au Musee Royal du Congo Belge @ Bruxelles, 1953 Societe Royale Belge D'Anthrop. et Prehistoire- Memoires Nouvelle series no.1 - * This is a very elaborate work of 250 pages, with maps and many photographic illustrations. While it is primarily a work on the uses of the mollusks by the natives rather than a systematic work on the molluscan fauna, it nevertheless figures many of the species and discusses them. I note at least one species that has been a puzzle to me and I expect this to be of value.

Growth and Decline of Populations and the Distribution of Marine Pelecypods by David Nicol- Journ. Paleontology, Jan. 1954. * A study of the geologic and geographic histories of 20 species of late Cenozoic pelecypods.

Nomenclatural Review of Genera and Subgenera ~~and~~ of Cucullaeidae by David Nicol. Journ. Paleon. Jan. 1954

Malacology- Trends and problems in pelecypod classification (the supergeneric categories) by David Nicol Journal of the Washington Academy of Sciences Jan. 1954.

Review of the living species of *Echinochama* by David Nicol. Journ. Wash. Acad. of Sciences, Nov. 1953. In this paper a new species is described from the coast of Brazil- it is *Echinochama brasiliiana* n. sp. The paper is well illustrated.

Annual Report 1953 of the Chicago Natural History Museum. A beautifully illustrated book of 139 pages.

Systematic Zoology- Vol. 3, No. 2, June, 1954

On the Nature of the Species by Paul A. Meglitsch. An attempt to properly review this excellent paper is impossible here, but all persons considering species new to science should find this article of some sixteen pages of great value and interest.

On the Nature of Species in the U.S.S.R. by Theodosius Dobzhansky. Regardless of whether you agree this is an interesting theory.

Under 'Points of View' there is an article by Ernst Mayr "Notes on Nomenclature and Classification," and a paper by Ian M. Moore "Nomenclatural Treatment of Specific and Intraspecific Categories". Both are articles of great interest.

Illustrated Catalogue of Japanese Shells Edited by Dr. Tokubei Kuroda. The index to Volume I 1949-1953 has been received.

Studies on the Eggs and Larvae of the Japanese Gastropods (4) by Tadashige Habe Seto Marine Biological Laboratory Vol. III, No. 2, Dec. 1953.

Notes on the Type Specimens of Three Species of Japanese Mollusks Described by F. Jousseaume by Tadashige Habe Seto Marine Biological Lab. Vol. III No. 2, Dec. 1953

Review of the Japanese Species of Lacunidae by Tadashige Habe-Venus Vol. 17, No. 4, Nov. 1953

Land Molluscs of Satsumisaki, the southernmost of Kyushu by Tadashige Habe The Venus Bol. 17m No. 4, Nov., 1953

New Freshwater Gastropod Mollusks of the African Genus *Lanistes* by T. Pain Breviora, Museum of Comparative Zoology, No. 31 A new species and a new subspecies are described and well figured.

A Comparative Study of the British Species of *Nucula* and *Nuculana* By J. A. Allen. J. Mar. Biol. Ass. U.K. (1954)

The Biology of *Limacina retroversa* By J. E. Morton J. Mar. Biol. Ass. U.K. (1954)

The Abundance of *Octopus* in the English Channel by W. J. Rees and J. R. Lumby J. Mar. Biol. Ass. U.K. (1954)

The Identification of British Species of the Genus *Ensis* Schumacher By N. A. Holme J. Mar. Biol. 1952

Observations of the Life History and Functional Morphology of *Cerithiopsis tubercularia* (Montagu) and *Triphora perversa* (L.) By Vera Fretter J. Mar. Biol. 1952

The Distribution of *Octopus vulgaris* Lamarck in British Waters by W. J. Rees J. Mar. Biol. Assn. 1952

Population -Dispersion in *Tellina tenuis* Ba Costa By N. A. Holme J. Mar. Biol. Assn. 1952

The Breeding of *Crepidula fornicata* (L.) in the River Blackwater, Essex By P. N. J. Chipperfield J. Mar. Biol. Assn. 1951

Turbonilla elegantissima (Montagu), A Parasitic Opisthobranch By Vera Fretter Journ. Mar. Biol. Assn. 1951

Observations on *Sphenia binghami* Turton By C. M. Yonge J. Mar. Biol. Assn. 1951

Die Typen Typoide des Überseemuseums Bremen L: Mollusca: Clausiliidae By Von Helmut Knipper, Bremen, Überseemuseum 26 pp 2 pls.

An extensive list of types is always welcome.

El Primer Clausilido De La Argentina Por M. I. Hylton Scott Neotropica Notas Zoológicas Sudamericanas. Vol. 1, No. 1, 1954

Nayades Del Rio Parana - El genero Diplodon en el biotopo isleno del Parana medio e inferior por el Dr. Argentino Aurelio Bonetto, Publicacion Tecnica No.62 ,Provincia De Santa Fe, Republica Argentina
* This is a well written and thorough paper of 56 pages and 7 full page plates.

Gastropodia Vol. 1, No.2, June 4,1954 This issue contains the following papers:

Discus rotundatus (Muller) in New Jersey and New York by Morris K. Jacobson

A New Color Form of Liguus By Ralph H. Humes. The new form is Liguus fasciatus form wintei Hum. Well illustrated.

Pulmonata Succineidae: Succinea (Desmosuccinea) pseudavara, a new section and species By Glenn R. Webb

The Life History and Sexual Anatomy Data on Ashmunella with a revision of the Triodopsin snails. By Glenn R. Webb

Pulmonata , Polygyridae, Polygyrinae: The sexology and taxonomy of seven species of land snails of the genus Mesodon by Glenn R. Webb

All papers are carefully and profusely illustrated with figures.

The following papers contained in issues of De Tropische Natuur Madjalab Perkumpulan Penggemar Alam Di Indonesia- Organ van de Naturhistorische Vereniging In Indonesie

Mollusca From Udjong Kulon Peninsula, Banten by L.J.M. Butot

Vragen En Korte Mededelingen- Een Verzoek Om Clausillidae Te Verzamelen April,1953 by F.E. Loosjes

Discussion and additional evidence on Achatina fulica by C.J. Jaski Sept.,1953

Korte Mededelingen - Megapodius feeding on Cyclotus by L.J.M. Butot

Korte Mededelingen- Mieren Als Slakkenverzamelaars- Ants as Shellcollectors by L.J.M. Butot Oct.,1952

Segmentina calathus (Bens.) reported from Plankton in Djakartabay by L.J.M. Butot

How to Collect Shells of land and Freshwater Molluscs by Butot

This is a well illustrated paper with numerous figures.

Catalogo De Los Molluscos Marinos De La Patagonia por Alberto R. C Carcelles Anales Del Museo Nahuel Huapi Buenos Aires 1950

An excellent paper of 99 pages of text,6 full page plates and a colored map. Complete data is given for each species, original description located, range etc.

The Relationship of Old and New World Melanians by J.P.E. Morrison Proc. U.S. Natl. Mus. 1954 37 pages and one plate.

An excellent and needed paper on a puzzling and confusing problem. The generic arrangement should be of genuine value to all working with this group in any way.

Occasional Papers on Mollusks published by the Dept. of Mollusks Museum of Comparative Zoology, Harvard University.

This issue is devoted to the accomplishments of Merrill E. Champion with an outline of his work- and a list of all of the Occasional Papers to date. Vol. 1, No. 18, Aug.,1954 is a Review Number and Index. It is quite important inasmuch as it consists of supplemental material to the earlier papers.

Note on a Rare Species of *Strombus* from Guam.

by Leo G. Hertlein

In October, 1953, Mr. Marvin L. Nolan of Napa, California, placed a collection of shells in the care of the Geology Department of the California Academy of Sciences. These shells, beautifully cleaned, were nearly all from live specimens which he assembled on the island of Guam while stationed there as a member of the Naval Air Corps.

Among the shells was a specimen of a species of *Strombus* differing from any heretofore represented in the collections in the Academy. This was believed to be *Strombus taurus* Reeve. Examination of the original description and illustration of that species confirmed the identification. Dr. Louis Brand of the University of Cincinnati stated (written communication) that he possesses an imperfect specimen of this species also from Guam. There are perhaps other specimens than the three here mentioned, but the species is evidently rare in collections. A record here of the accumulated notes on the study of this species may aid others who encounter this member of the Strombidae.

Chadwick, 1899, in his study of the Strombidae, cited *Strombus taurus* as one of the species which he had not seen. He placed it in his group D, which included *Euprotomus* Gill. That supraspecific group name was proposed by Gill (Amer. Jour. Conch., Vol. 5, Pt. 3, Feb. 3, 1870, p. 131) in a footnote containing a discussion of *Pterocera* as follows: "The 'entirely lateral' sinus contrasts with the anterior position characteristic of the genus *Euprotomus* (*St. auris-dianae*, etc.), in which the expansion of the lip and deflection of the anterior portion of the shell and revolving striae throw it entirely forwards." The type by monotypy is the beautiful and well-known *Strombus auris-dianae* Linnaeus.

Kuroda (Venus, Vol. 12, Nos. 1-2, July, 1942, pp. 1-8, figs. 1-4) discussed six species in Japan which he placed under *Euprotomus*, and Iredale (Rec. Australian Mus., Vol. 18, No. 4, June 29, 1931, pp. 211-212) mentioned species in Australia referable to this group.

Strombus taurus Reeve

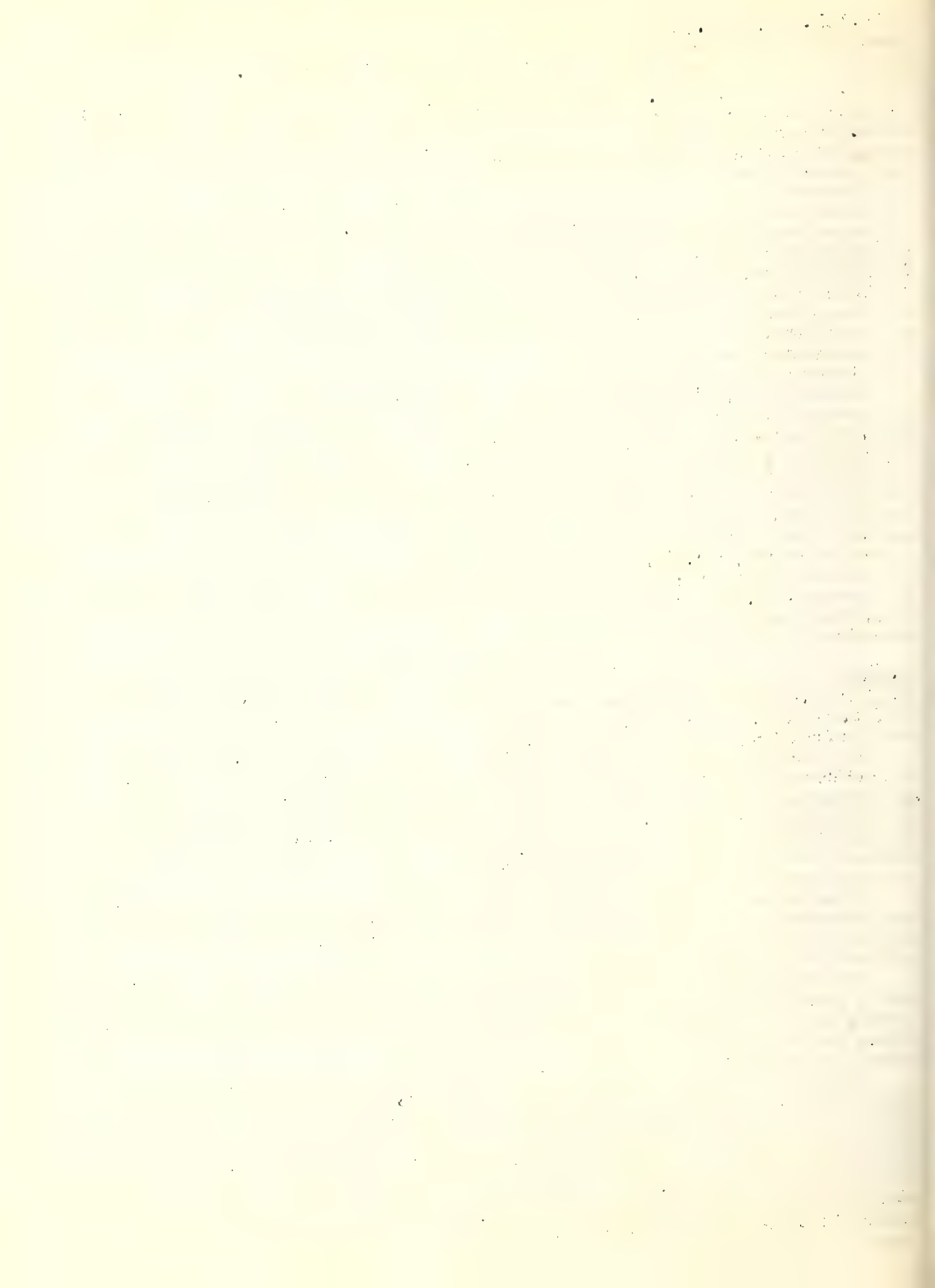
Strombus taurus Reeve, Proc. Zool. Soc. London, November 11, 1857, p. 207, pl. 37, fig. 3. --- Tryon, Man. Conch., Vol. 7, 1885, p. 111, pl. 4, fig. 34. --- Paetel, Cat. Conchyl.-Sammlung, Vierte Neubearbeit., Abt. 1, 1888, p. 312. --- Chadwick, Nautilus, Vol. 13, No. 7, 1899, pp. 75, 78.

Type Locality: "Hab. Amirante Islands, a group of the Seychelles." Reeve's original description in Latin will not be repeated here, only his remarks in part on the characteristic features: "In detail of pattern and sculpture it resembles *S. laciniatus*, but there is a large central oblique tubercle on the back, and the tip is thickened into two very large obtuse oblong tubercles, the upper part being produced into two decided *Pterocera* claws, one of which is prolonged in a curved manner to the extent of an inch and a half."

Tryon briefly described the coloration as follows: Yellowish white, maculated and strigated in a zigzag manner with yellowish chestnut, expansion of columellar lip bright orange-brown, interior of aperture purple-tinted, margin of outer lip with bright chestnut square spots.

The measurements of the original specimen were given by Reeve as: "Long. 31/2 poll., lat. 25/8 poll." The present specimen from Guam has the following dimensions: length, apex to base, 85mm.; tip of longest extension of outer lip to base of shell, 99mm.; length of longest extension of outer lip, approximately 30mm.; maximum diameter of shell, 60 mm.

The present specimen differs in minor details from the illustration of the type specimen. It appears to be a little more slender, the interior of the aperture is not so highly colored, and the two extensions on the posterior end of the outer lip (the presence of which evidently led to the choice of the specific name) are only slightly curved in comparison to those in Reeve's illustration. These differences may be due to individual variation or to the stage of growth. In general characters of the shell, the similarity with the original illustration is too great to warrant the description of a new form, unless examination of a number of specimens shows the variation to be constant.



Color In the Genus Oliva- Some casual observations by John Q. Burch

Of all the genera of mollusks color in the genus Oliva is without doubt the most independible character in assigning to species. As a dealer I buy them in large numbers and at least five species of Oliva from the Western Pacific and Indian Ocean show such a fantastic color variation that I have offered in my lists such items as ' 20 different color forms ranging from coal black, snow white, lavender, lavender spotted, bright orange etc. of the same species with inter-grades of all. I find it interesting to lay out such an array and ask anyone to point to any character other than color that might differentiate them, and then lay out five coal black specimens and show that these represent distinctly different biological entities.

The golden yellow form of Oliva incrassata Solander (or Oliva angulata Lamarck if you prefer to consider Solander here nonbinomial) has been a semi scarce color form of which I had seen no more than perhaps fifty specimens and most of these from La Paz, Baja California until recently , within the past year collectors started bringing them in by the gross from the neighborhood of San Felipe. I have seen no more than perhaps a dozen of the snow white color form, but in my opinion it is doubtful whether these should be called simply ' albanos because there are numerous specimens showing part white and part typical gray or yellow. I am compelled to recall that I have seen a similar color display in a litter of kittens but recall no mammalogist attempting to split up the genus Felis domesticus on that account.

A puzzler in this line came in a short time ago. I have had Oliva emicator Meusch. from across the Pacific to Japan and they have been very uniform in color, ivory base with lavender dots. Then rather a large lot arrived from Zamboanga, Philippines of a solid pink apricot shade, beautiful shells that almost anyone would at first glance call different, but I studied these with great care (honestly hoping for something new) and could arrive at no conclusion other than that these were a mere color form of O. emicator. Paint them all white and I will defy anyone to separate them.

The color forms of Oliva erythrostoma are myriad. I have been guilty of sending out numerous named subspecies of this group, but perhaps no one should be permitted to see a thousand specimens in a row showing all of the so called subspecies and also all imaginable intergrades. It is possible that some of these subspecies are genuine ecological varieties. For example I think that I can pick out one from Guam mixed with specimens from Japan, Philippines etc. But paint them all white as I suggested and see who could then separate them.

Our own California Olivella biplicata has been given many color form names, but to be thorough in this line some one should have Ridgway's Color Chart and name another hundred.

There may be some question about the systematic standing of the species commonly called Oliva irisans Lamarck , but the species is well known even though it may have several names. The stock room will show boxes of this species labelled ' bright black', ' bright orange', ' variegated' and that last one is the interesting one containing specimens part orange, part black, olive green etc. but paint them all white and I dare anyone to separate them.

Oliva funebris Lamarck with the distinct keel along the outer lip is certainly a species easily classified, but not by color. I have them glossy black, olive green marked with black, solid dark green, solid light green etc. Some of these have been given trinomial names or even specific names , but I do not think it possible to separate them in any way as I said if they were all painted white.

I wish to add in conclusion that these are the opinions of one humble observer. Of course, I have the publications of Dautzenberg and others with their beautiful color plates describing the multitudinous subspecies, and if I merely sent you those typical of described color forms you might be happy, but if I sent you all of the intergrades, you could do one of two things, either call them all one species or you could get busy describing a host of others.

And I am now waiting to hear from some friend who specializes in the Olividae to advise me where I am in error.

Sobre Embletonia mediterranea (Costa) by M. Vannucci e K. Hosoe
Nudibranquio Regiao Lagunar De Cananeia from Boletim do Instituto Oceanografico Tomo IV- Fasc. 1 e 2 Universidad De Sao Paulo, Brazil.

* An excellent review of the genus with numerous plates.

Shells Along the Florida Shore- A Florida Speaks Production-
400 shells illustrated many of them in color- Text by Mrs. Hugh Branham- Shell Specimens from the Branham Collection- This little booklet should be of great value to the collector visiting Florida. It may be had from the Florida Speaks Corporation, St. Petersburg, Florida for \$1.00.

A series of interesting articles by Professor David L. Causey, University of Arkansas- in Focus - the house publication of Bausch and Lomb Optical Co., Rochester 2, N.Y.

Fish Lice, Parasitic Roaches, The Decadence of the Male, Parasitic Barnacles, Is It a Male ?

The Bay Clams of Oregon- Their Economic Importance, Relative Abundance, and General Distribution by Lowell D. Marriage Fish Commission of Oregon, Portland Oregon, Contribution No. 20, May, 1954.

An interesting booklet of 47 pages, numerous plates of the species, maps of many localities along the Oregon coast. This booklet should be very valuable indeed to anyone either collecting or studying the Oregon fauna.

Puget Sound Oyster Bulletins State of Washington, Department of Fisheries, State Shellfish Laboratory, Quilcene, Wash.

These bulletins are devoted to the technical problems of seed oysters set, etc. but there occasionally appears some articles of rather more general interest

Circulares Del Museo y Bibliotheca De Zoologia De La Habana-
Editor : M.L. Jaime, 13 No. 351, Vedado, Habana, Cuba- Price \$1.50 per 100 pages.

There is a vast amount of valuable information in these publications. This issue is March-April, 1954. While most of the papers are in Spanish, some are in English and all well worth while.

In this issue there is a continuation of the reprint of Los Molluscos De Cuba en la Historia, Fisicia, Politica y Natural De La Isla De Cuba Por Alcides d'Orbigny

Catalogo De La Fauna Cubana - Catalogo De La Subfamilia Gagreellina En Las Antillas Por Miguel L. Jaime

Shells of Fire Island by Catherine Anders

Shellfish Contamination Controls in the New York City Area by Michael Krassner

Valor De Los Conchas En Las Primeras Civilizaciones Por Dr. P.H. Fischer, Traducccion del Frances, Por Dr. J.R. Castellanes- La Purpura The 25 species of land and FW mollusks from Great Neck- E. Slater

MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA.

August 3, 1954

Mr. John Fitch, vice-president, called the meeting to order at 7:45PM and welcomed a small group of thirty, including guests.

Miss Bessie Faulkner, treasurer, announced that our membership is increasing, however, and now numbers sixty paid-up members.

The passing of Mr. James C. Marsh, a past officer of the club, was announced and Mrs. Rose Burch was asked to send a card of condolence to the family.

Mr. Emory Chace of the San Diego Museum of Natural History reported on a trip to Turtle Bay, Baja California. Collecting was not too good as the tides were only average. However, he stated that a small amount of dredging was more successful.

Mr. George Kanakoff, noted paleontologist of the Los Angeles County Museum, was introduced as speaker of the evening and spoke on "Fossil Collecting in California".

The excellent locations of fossil deposits described by the speaker were incidental, as compared to his strong conviction that we should collect in series regardless of where we collected.

Much of the work with fossils, prior to 1931, was hastily done and has placed a large burden on the serious students that followed. Too much emphasis was placed on individual specimens and fragments of specimens. This resulted in a list of names that had little value and has taken the valuable time of our professional students to eliminate the synonymy.

The collector who will take the time to go to some of the deposits mentioned by the speaker, can take some very interesting species. Many of the species to be in this way can be taken alive only by deep-dredging in the more Northern part of this country. Amateur collectors can benefit the professional by contributing duplicate material taken from these fossil beds.

Mr. Kanakoff, speaking from twelve years work and many tons of sand sifted, stated that the Newport Bay fossil beds are the champion of the world. Here, all phyla of the animal kingdom are represented. Mr. John Fitch recently helped add to the fauna of those deposits by identifying twenty species of fish.

The sand beds of Playa Del Rey, adjacent to Lincoln Blvd. and above Hughes Aircraft were mentioned as good, as well as several areas in San Pedro.

The meeting was adjourned by Mr. Fitch at 9:45PM to allow the group to examine the mounts brought by the speaker that showed without question the value of collecting in extensive series. D.L. Burford, Secretary

The Long Beach Shell Club are now able to offer their book, which has been out of print for some time. This book has many interesting papers on shells and their stories, written by the members. The price of the book is: \$1.25 plus postage. You may obtain one by writing: Mrs. Mary Bormann, 4331 Vermont St., Long Beach 14, Calif

Minutes 141 Aug.-Sept., 1954
MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA.

Page 12

September 7, 1954

Miss Ruth Coates, president, called the meeting to order at 7:30 PM and welcomed forty-one persons, including guests.

Mrs. Elsie Chace reported the passing of Mrs. Kate Stevens at 103 years of age. Mrs. Stevens was formerly the Curator of Molluscs at the San Diego Museum of Natural History.

The business meeting was finished early so that all members interested in showing slides would have time to do so.

Mr. and Mrs. Crawford Cates presented slides taken on their vacation at Mulege, Baja California and enthused the group to inquire as to accommodations and airline fares.

We then moved eastward with the help of Mr. & Mrs. Brooks and toured the Southern states with our first stop being made at Galveston, Texas before proceeding to Florida and Sanabel Island.

Dr. Mattox continued our travels and took us to Puerto Rico where we were shown the beauty of tropical islands and their surrounding waters.

Mr. & Mrs. Chace showed several slides including personnel of the U.S. National Museum taken by their daughter and son-in-law, Mr. and Mrs. French.

Mr. Hemple showed us slides of a number of Japanese shells.

Mrs. Rose Burch brought slides of worldwide Cypraea taking us on a quick trip to many lands.

Mrs. Mary Turver concluded the program with the presentation of a paper on the Conidae by a foreign correspondent. She explained that she had originally planned to present this work at the AMUPD but a lack of time prevented her doing so. This paper was well represented by many specimens from the Turver collection.

The meeting was adjourned at 10:00 PM with the consent of a travel-worn group.
D.L. Burford, Secretary

More New Publications

New Californian Pleistocene Eulimidae by S. Stillman Berry
Bulletins of American Paleontology, Vol. XXXV, No. 151, 1954

A number of new species of Balcis are described as well as a discussion of several known species. The localities are the Lomita formation of San Pedro and Long Wharf Canyon, Santa Monica. Interesting paper of 16 pages and 1 plate. Incidentally I had thought that I had worked off a few surplus pounds digging in all of the known fossil deposits of Southern California but this Long Wharf Canyon is a new one to me.

Ecological Conditions Accompanying Loess Deposition in the Great Plains Region of the United States by A. Byron Leonard and John C. Frye. The Journal of Geology, Vol. 62, No. 4, July, 1954

Some Terrestrial Gastropods From the Deep Creek Mountains, Juab County, Utah by Ernest J. Roscoe- from the Great Basin Naturalist 14:19 Aug., 1954

The meeting of the Conchological Club of Southern California for Oct. 5 should be of unusual interest. Miss Ruth Coates has been conducting a class in conchology for the past year, and at this meeting members of this class will report, each reading a paper on selected subjects upon which they have been working.

American Malacological Union meeting at Durham, N.H.; Letter from Mrs. Margaret Teskey, Sept. 3, 1954.

I am two weeks late in reporting on the twentieth annual meeting of the American Malacological Union, but it has taken just that long to recover from those enjoyable three days.

As you know, we met at the University of New Hampshire; it was the second largest meeting in A.M.U. history- 78 were on hand and only the 1947 meeting at Pacific Grove was better attended. We were honored by the presence of some of our west coast members: Dr. and Mrs. Howard Hill, Roy Morrison and his sister and Miss Harriet Thomson who brought a guest from Detroit. From still farther away came Yoshio Kondo of the Bishop Museum in Honolulu and Donald McMichael of the Australian Museum in Sidney; they are both engaged in graduate work at Harvard.

I was reminded again of that Pacific Grove meeting, for on this occasion our host, Dr. George Moore of the University of New Hampshire, was assisted by Dr. "Pete" Risser of the University of Tennessee. I mentioned to him that at the '47 meeting we had been given beautiful specimens of Calliostoma annulatum and C. canaliculatum which had been collected a few hours earlier from the kelp in Monterey Bay; "I helped with that job!" said he. You helped too, John; do you remember? Pete says that you nearly drowned him, but that is another story.

But to come back to Durham and 1954: we ate lobster and more lobster and then some lobster. For it had been the prospect of seafood and shore dinners which had been the deciding factor in the decision to meet in New England, and Dr. Moore really delivered the goods. The 1955 meeting will be held in New York City, and I suspect that some of the sated delegates may have already begged the committee- "Please, NO LOBSTER!" But 1955 is a year away.

The papers were excellent, although limited time curtailed discussion in some cases and others were left out altogether. Three collecting trips were made, two in the early morning to catch minus tides. The evenings were taken up by a picnic, a shore dinner de luxe (tendered to her fellow-delegates by Dr. Jeanne Schwengel) and the annual dinner.

At the business meeting it was announced that the vote as to the adoption of the new Constitution had been favorable and that said Constitution was therefore in effect. Announced too that the Executive Council had added thereto a by-law whereby the annual membership dues have been increased to \$2.00 per year with additional members of a family eligible to become members for \$1.00 each. Two changes in the Constitution were recommended by the Council and the membership will be polled accordingly; the first is that a new office be created, that of Publications Editor; (Dr. George Moore was appointed Publications Editor Pro Tem by President Bequaert) and the other would increase the Life Membership fee to \$40. And finally, the following slate of nominated officers was presented and election was by acclaim:

President: Morris K. Jacobson; Vice-president: Allyn G. Smith; 2nd Vice-president: Ralph O. Fox; Secretary-treasurer: Margaret C. Teskey; Councillors-at-large: R. Tucker Abbott, Anthony D'Attilio, Yoshio Kondo, Ruth M. Turner.

Yes John, it was a very successful meeting, one of the best. I know that I say that every year, but they get better and better. See you in New York in 1955?

Yours very truly, Margaret Teskey

MINUTES 142

OCT. 1954

CONCHOLOGICAL

CLUB OF SOUTHERN

CALIFORNIA

Subscription \$2.50 per year

We are now meeting at the Los Angeles Museum, Exposition Park, Los Angeles, Calif., the first Tuesday of every month at 7:30 P.M. All interested persons are cordially invited.

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QUESTIONS IN CLASSIFICATION by John Q. Burch

I wish it understood that the following comments or others made in succeeding papers are in fact requests for advice. It is a rare day in our establishment when some problem of nomenclature fails to appear. Most of these comments will be either from discussion or correspondence with other conchologists. This has been the custom for a good many years and it has just occurred to me that perhaps others might wish to join in the discussions. All remarks will be made from the study of actual specimens in hand. It is my sincere wish to be corrected when in error.

The study of the genus Conus is always interesting because there seem to be so many disputed assignments. There has been a tendency on the part of some very eminent conchologists to simplify matters by merely placing everything that remotely resemble each other in

the synonymy of the oldest name. In my opinion Tryon in the Manual of Conchology was guilty of some of this, although the figures in the best of the color editions of Tryon are so poor that one should be disposed to sympathize with him if his specimens resembled the figures. Reeve at least has fine plates and the figures usually resemble actual specimens. Tomlin in his check list gave us an indispensable work. There are occasions when Sowerby, Kiener and others contribute valuable comparisons. Hanna and Strong in West American Mollusks of the Genus Conus solved many of our problems in this genus on this coast even if I may suggest that in my opinion they also contributed a few subjects for debate. However, these questions arise one at a time and I am simply going to outline a few of those at hand and on the table at the moment. It will be of interest to me to know whether or not such a paper as the following will be considered worth while because such questions are here literally by the thousands.

Conus nicobaricus Hwass from Zamboanga, Philippines. The shell at hand is a fine and typical specimen which compares in every detail with the description and with Reeve's figure 'pinkish background, yellow interior etc.'. There are those among our group who are disposed to place C. nicobaricus in the synonymy of Conus arenosus Solander. The shell I have been labelling Conus arenosus has come to me only from Bombay and Calcutta, India, and they in turn fill all details of the description. They never show any tinge of the yellow interior and the markings on the shells are quite different. I am perfectly satisfied that I can easily separate a mixed lot of the Indian Ocean C. arenosus and the Philippine C. nicobaricus.

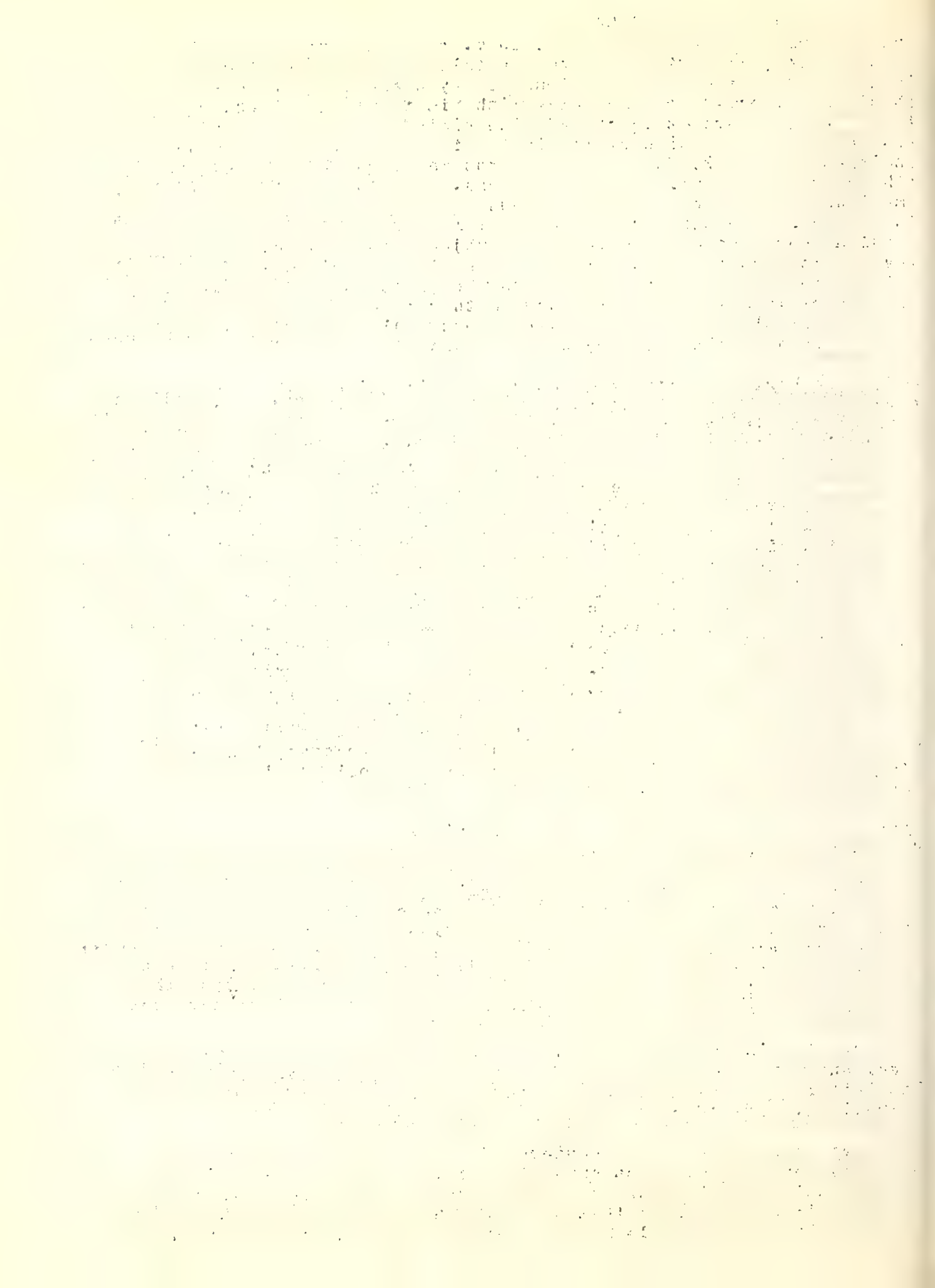
There is another taxonomical problem in this group, and that is that some are placing Conus arenosus in the synonymy of Conus arachnoideus Gmelin. I have been unable to find a discussion of the reasons for so doing, but assume that those writers are disposed to disregard the Solander names, and they may be right in this. If they are the name will be Gmelin's name.

It might be mentioned in passing that some have settled this matter by recognizing C. nicobaricus as a subspecies, hence-
Conus arenosus nicobaricus Hwass. My personal opinion is that they are distinct species.

Conus terminus Lamarck- All 'lumpers' place this in the synonymy of Conus gubernator Brug. 1792. The specimens I have at hand and which I am labelling C. terminus came from Portuguese East Africa and they fit the descriptions. C. terminus is described as having a less rounded shoulder, is narrower, edge of whorl elevated. In my opinion this is distinct from the Indian Conus gubernator Brug., a much more robust species. It is true that the color markings on the two are very similar. It may merely be a local race that causes C. terminus at hand to show a tinge of pink or lavender missing in my specimens of C. gubernator.

I am greatly indebted to Mr. R. Wright Barker for his comments on specimens sent him and a good part of the following will be from his letters. Mr. Karl Greene of Hawaii has also given me some valuable discussion of certain species of Conus.

Conus vitulinus Hwass in Bruguiere, 1792. Those of you who are among my regular correspondents will recall that in my last list 235 I mentioned being puzzled by a group of shells from Zamboanga and tentatively labelled them C. vitulinus ??? thinking myself in error but being unable to properly assign them to a species.



In commenting upon a specimen of Conus vitulinus which I had sent labelled (typical) Mr. Barker states " The specimen you sent seems to be this species (from Zamboanga, Philippines). The main characters, from the original description and repeated by most later workers, seem to be : (a) a flattened spire; (b) the threads on the lower third of the shell, the ones nearest the base being granulated; (c) the spiral striae on the spire are punctate under a lens and the growth striae are very weak; (d) the shells are marked with a/ very dark longitudinal streaks, also with dark bands. Sowerby, Thesaurus, Vol. III, p.36, discusses the shells as follows: " Similar to C. senator but reddish-black banded and variegated, with two white bands; spire flattened, spotted; (figs. 223-224). " Known from Conus senator by greater richness and depth of colour and markings and the comparative flatness of the spire."

Conus planorbis Born 1780. Mr. Barker comments " This to my mind is the shell listed as No. 3510 labelled C. vitulinus ??? Zamboanga, Philippines. There seems to have been a great deal of confusion regarding this species. Born's description and figure are, I think good. The description is as follows:

" Testa conica ventriuscula, prope basim transversim striata, striis elevatis, punctato scabris; spira plana; anfractus canalliculati; margine externe acute; color ventris fulvus, spirae albo fuscoque maculatus, bassos intus amethystinus."

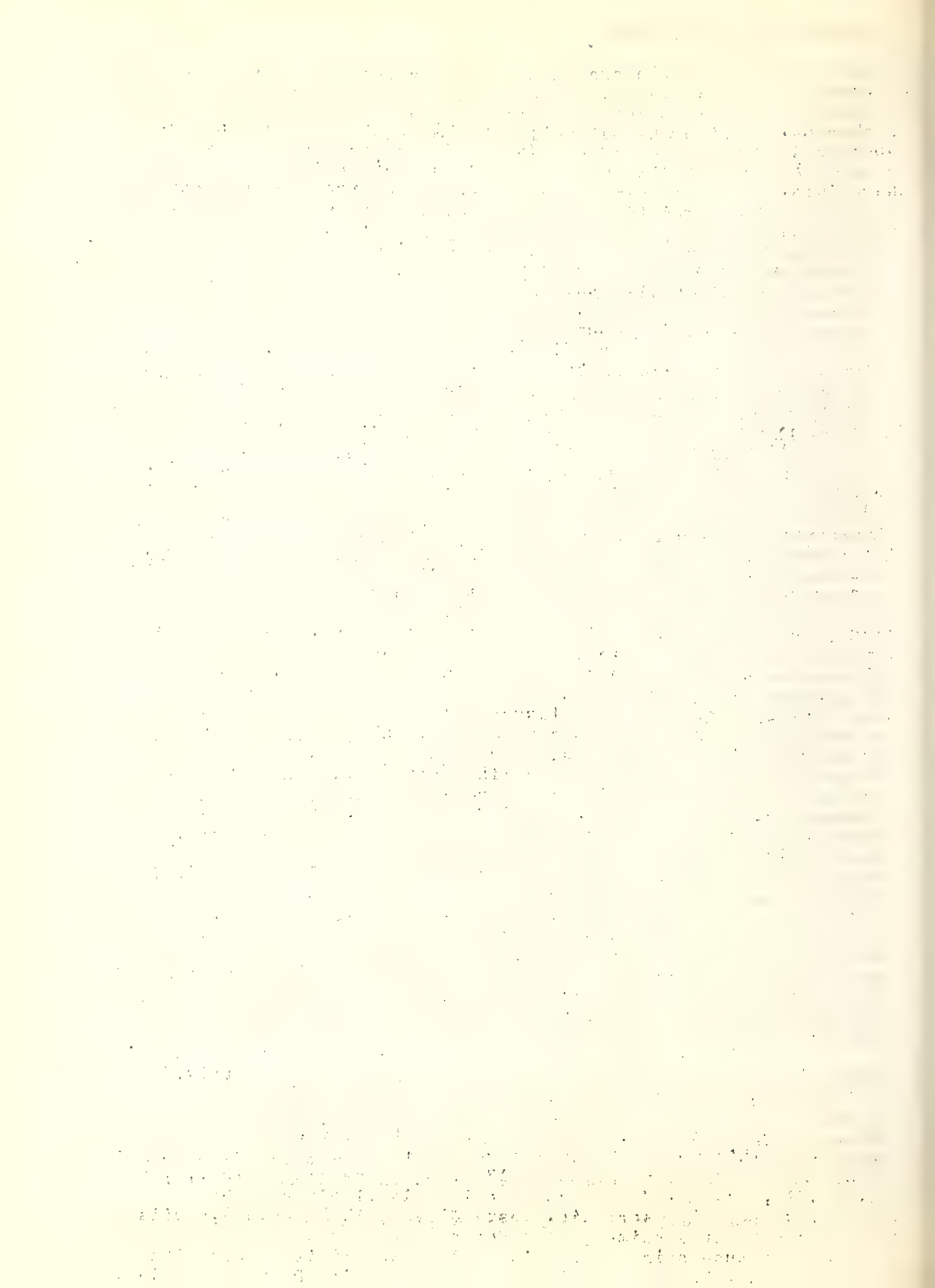
" Your shell checks extremely well with the generally fulvous colour, the dark brown markings on the white spire, the flatness of the spire, the punctately granulate striae on the lower part of the shell and the tinge of " amethyst " purple inside the base. (The underlining is mine). Reeve and Kiener make planorbis a synonym of senator Linn. but figure a shell quite unlike Born's figure and description as I see them. Dautzenberg, 1937 makes C. senator auct. non Linnaeus, a synonym of C. planorbis Born and figures two shells one not unlike Born's planorbis but with a higher spire, and one which I regard as closer to your senator ? (see below). (See Dautzenberg, 1937, Red. Sci. Voy. aux Indes Orientales Meerlandises, Vol. II, Fasc. 18; Mollusques marins, 3: Famille Conidae- pl. iii fig. 1- * Gasterpodes Marins"/ . Sowerby, Thesaurus Conch. Vol. III, p.35, describes planorbis as a valid species as follows: " More angulate than C. senator L., two chocolate bands, spire flat, black spotted, whorl carinate. The dark chestnut bands and black spotted flattened spire sufficiently distinguish this from Conus senator."

*** It is to be regretted that Mr. Barker is so far away. I would like to discuss a tray of shells from Kii, Japan presumably named by Dr. Kuroda. The Japanese shells are definitely higher spired, more elongate and quite unlike the specimens discussed above and also quite unlike anything I have ever called C. senator. As usual one problem brings up another. These shells from Japan arrived labelled Conus planorbis Born.

Conus senator Linnaeus , auct. Mr. Barker comments-

"I believe this to be the shell/ you sent as C. senator. Linnaeus defined his species as follows: 1758. Conus senator, Linn., Syst. Nat., p.714, No.300. " C. testa conica, laevi glabra, spirae anfractibus obtusis scriptis. Testa glava, albo maculata, striis transversis numerosissimis, albo fuscoque, articulatis."

The more obtuse spire, yellowish colour and striae check with the shell sent, but one should perhaps agree with Deshayes, Hanley,



Dautzenberg and others that the species is too poorly defined, in the absence of reference to any figures, for proper recognition. It has been recognized and figured, however, by Reeve, Kiener and Sowerby at least, and their figures agree very well with the shells you sent, also with another I received elsewhere some time ago, erroneously labelled 'C. lineolatus Hwass'. Hwass had this shell in his collection and figured it in pl. 326, fig. 4 (1797) of the Tableau Methodique; This figure was labelled by Bory St. Vincent and Lamarck as C. vulpinus Hwass, a form described by Hwass on p. 645 of Vol. I of the Encyclopedie Methodique, allied to C. vitulinus and C. ferrugineus, both Hwass's species. Hwass gave three forms of his C. vulpinus, referring to C. planorbis Born in the in the synonymy of vulpinus var. A, his var. B being granulated. Reeve places planorbis, ferrugineus and vulpinus in the synonymy of C. senator, thus confusing the issue to my mind, as Hwass clearly had several forms in his collection which he differentiated. Hwass's figure shows a form like that you sent with an obtuse rather convexly rounded spire, dark marks on it very similar, a number of darker transverse lines spaced as in your shell, general shape identical, some lighter patches, and describes it as having a dark yellow brown colour, dark brown marks on the spire, dark brown widely spaced thin transverse lines on the last whorl, much fainter granulation and striae on the lower part of the last whorl than in C. vitulinus and C. ferrugineus (which may be planorbis ? as stated by Lamarck and Deshayes). Hwass also says the interior of his C. vulpinus has a faint violet tinge to the white colour (see your shells where it is clearly shown I think). He also shows a figure of his variety which, apart from a higher spire agrees fairly well with the banded C. planorbis Born (see earlier). From this I conclude that Hwass confused senator and planorbis as vars. of his C. vulpinus.

Kiener figures your shell as senator but includes planorbis with it as a synonym. Reeve figures it as senator with planorbis as synonym, and Sowerby Thesaurus, Vol. III, p. 35 has it correctly I think, as a valid species, figured (fig. 222) like your shell, also Reeve's and Kiener's, distinguished from the rest by following description: "Oblong, fulvous, subulate, two broad darker bands (fuscous); angle of shell pale, submaculate; spire striate, slightly elevated, maculate; last whorl carinate, f. 221-222." I believe the distinguishing features are as follows:

- (1) Raised rather convex spire
- (2) More swollen body whorl, the widest part below rather than at the carina.
- (3) The violet tinge to the white interior.
- (4) The absence of the dark marking at the base of the interior of vitulinus and the amethystine mark at the base of C. planorbis.
- (5) The striae on the spire are crossed by very marked growth lines, giving an appearance of reticulation. This was also given by Hwass and Bruguiere as a distinguishing feature between the punctate striae on vitulinus, the weaker but coarser striae on C. ferrugineus and the present shell.

Sowerby also adds C. pulchellus Swainson to the present group, but I do not have the original figure and description and those of Reeve and Sowerby are not too satisfactory--furthermore I have no shells I have determined as this species for comparison. Sowerby says of it: "Narrower than C. senator, center somewhat contracted with transverse dotted lines, two white bands interrupted with

spots; spire depressed, canaliculate and spotted". Reeve suggests pulchellus is same as cinctus and speaks of a roseate colouring! Kuster and Weinkauff confuse matters still further in Conchylien Cabinet, as he gives our senator as 'C. vulpinus var. C', with senator as synonym, vitulinus in his 'vulpinus var. A', and planorbis is his 'vulpinus var. B'. Weinkauff, later in the same monograph straightens it out a bit, reinstating C. vitulinus Hwass and C. planorbis Born, but with senator Gmelin in the synonymy of the latter."

Conus generalis L. - Mocambique, Portuguese East Africa. Those of you who receive my lists will recall that I commented upon the variation in this group but listed them as a color form of the species. Mr. Barker states "I think these are typical C. maldivus Hwass, placed as a variety of generalis by Kiener, Weinkauff and others, but regarded as a valid species by Reeve, Sowerby, Dautzenberg and Tomlin etc. Nice shells.

Conus lignarius Reeve - Zamboanga, Philippines - My number 3552. This species has puzzled me because I seemed to have two distinct color forms that varied also somewhat in shape. I am disposed to stand corrected and advise those to whom I have sent these that the large light colored specimens are probably C. lignarius as labelled but the dark shells should be changed to read Conus furvus Reeve.

Conus tinianus Hwass and C. tinianus rosaceus Chemn. South Africa. I think that in one of my lists I commented that in my opinion this entire group seemed to be too close to Conus aurora, and I hoped that the collectors in South Africa know their shells better than I did. Mr. Barker calls my attention to a paper which I had overlooked by Tomlin and Winslow, Nautilus, Vol. XII, 1927, pp. 43-45. They regard tinianus as distinct from the South African forms and place tinianus of some authors non Hwass, caffer and loveni of Krauss, rosaceus Dillwyn, secutor Crosse, fulvus and beckeri Sowerby and lavendulus Bartsch in synonymy of C. aurora Lamarck.

Murex imperialis Lamarck - I certainly do not wish to pretend for a moment that I know enough about Caribbean species to even make an intelligent talk with Dr. Clench about them. However, upon receipt of this large lot from Venezuela I was very much amazed at the apparent differences between these and the Murex pomum Gmelin of which I have had such vast numbers from Florida, Cuba, Haiti etc. The collectors in Venezuela label their shells Murex imperialis Lamarck which, as you may know, is placed in the synonymy of Murex pomum Gmelin in Johnsonia. The color variation is very different and the absence of the so-called eye is also interesting. I prefer not to argue with Johnsonia, but I do feel that these huge specimens from Venezuela might very fairly be labelled Murex pomum imperialis Lamarck because they are at least separable with the material I have at hand. Of course, if I had the Harvard collection to study I rather suspect that so many intergrades might appear that one would be compelled to call them one biological entity.

The Marine Molluscan Fauna of Guadalupe Island, Mexico

by: A.M. Strong

Guadalupe Island is situated about 150 miles southwest of San Diego, California, and about 150 miles from the nearest point on the coast of Lower California, Mexico, in Lat. 29 deg. North, Long. 119 deg. West. No sedimentary rocks have been found on the island so the geologic age of the island can not be definitely determined. The character of the lava and the amount of disintegration indicates that it is about the same age as the older lava flows of Southern California and northern Mexico. These are generally considered to be of Pliocene age. The ocean floor surrounding the island on all sides lies at a depth of 2000 fathoms or more with everything indicating that it is an isolated volcanic cone which has never been connected with any land mass.

The island is close to the shipping lanes from Panama to California and was frequently visited in the early days. The land fauna and flora, with their endemic species of birds, insects and plants, formed interesting studies of which considerable has been written. This land fauna and flora is distinctly of the waif type: that is, it consists of species which have been accidentally introduced in various ways. Conditions have been such that a number of distinct species have developed. Two trees from there, a pine and a palm, were introduced into California in the early days and were planted in the gardens, particularly around Santa Barbara.

The Marine life around the island is much less known. Prior to 1925, only a few species of mollusca had been reported and these of the larger and showier shells. In that year, the boat returning a California Academy of Sciences expedition to the more southern islands was storm bound at Guadalupe Island for a few days. A small area of sand bottom was located near the anchorage in from 10 to 25 fathoms. By pulling a small dredge back and forth over this area, a considerable collection of shells was made. This collection proved to be mainly of small species - eight of which were undescribed, and 24 were southern extensions of the ranges as previously listed.

In December, 1946, Woodridge Williams was one of a collecting party on the schooner E.W. Scripps of the Scripps Institution of Oceanography which visited the island. He collected quite extensively in the inter-tidal zone and secured considerable material from deeper water with the assistance of a diver. This later work was done in two places, one in 10 to 18 fathoms on rocky bottom and the other in 26 fathoms on coralline and rock bottom. The mollusca from this work was turned over to the California Academy of Sciences to be worked up. It proved to contain 85 species of gastropods and bivalves, of which two were undescribed and two had not previously been reported that far south. There are 31 species in the collection which were not included in the list published by the Academy. (Proc. Calif. Acad. Sci., 4th ser., vol. 19, No. 1, 1930). The known fauna of the island now contains 96 species of gastropods, 2 species of scaphopods, and 18 bivalves. To this are to be added a few species of chitons which have not been worked up in detail as yet.

This molluscan fauna is distinctly not of the waif type. It consists of a closely related ecologic group. They are to be found or to be looked for on the shores of the Santa Barbara Islands to the north. They live on the floating kelp, in the kelp holdfasts, or on the rocks to which the kelp attaches itself. It is well known that at times large patches of this kelp break loose from the shores of Catalina and San Clemente Islands and drift a long ways to the south before rotting and sinking. Such rafts could easily lodge at times on Guadalupe Island and form a bridge by which means introductions could be made. That the introduction has been highly selective is illustrated by the fact that while 9 species of Odostomia are included in the fauna, not one of the equally numerous species in the genus Turbonilla have been found.

The Guadalupe Island molluscan fauna contains a few species of particular interest. Tegula regina Stearns (Proc. U.S.N.M., vol. 16, 1892, p. 350, pl. 50, figs 6, 7) was described from there nearly 60 years ago. It was long known only from there, but more recently it has been collected off Catalina and San Clemente (CONT.)

MINUTES 112, OCT. 1954

Islands. This is the largest and finest of the west coast tegulas. Astraea (Pomaulax) undosa Wood is one of the large shells brought from the Island by early visitors. Williams also found three other species of Astraea, one of which is quite similar to it and fully as large but higher spired and with more subdued sculpture. It seems to be an undescribed species. Another species was Astraea (Pomaulax) petrothauma Berry (Bull. Amer. Paleont., vol. 25, no. 94A, 1940, pp. 10, 11, 12, pl. 2 figs. 2, 3), described from the Lower Pleistocene, "Hilltop Quarry" at San Pedro, California. This is the first record of this species as a living shell. The third was Astraea lithophora Dall (The Nautilus, vol. 23, 1910, p. 135, unfigured), the type of which was collected at Cedros Island and previously known only from there. In Dall's description, it is stated "operculum?". In Williams' material the operculum is present. It is much the shape of that of Astraea (Pachypoma) inaequalis Martyn, but instead of being smooth has a single longitudinal rib. It may represent another subgenus.

Another rare species collected by Williams was Liotia californica Dall (Bull. Mus. Comp. Zool., vol. 43, no. 6, 1908, pp. 344, 345, unfigured). The type and only previously known locality was off Lower California in 112 fathoms. This is the largest species in the genus from the west coast, and Williams has one specimen a full inch in diameter. Still another species collected was Bursa calcipicta Dall (Bull. Mus. Comp. Zool., vol. 43, no. 6, 1908, pp. 320, 321, unfigured). The type was dredged off Cocos Island. There is no other published record for this species, but specimens in collections are labeled as dredged off the coast of Lower California.

The localities at which mollusks were collected were described in a letter by Woodbridge Williams as follows:

M25 (Loc. 32818 (C.A.S.)). Guadalupe Island, southwest end, cobble spit running westerly from Mexican Marine base, December 6, 1946. Inter-tidal.

M25A (Loc. 32818 (C.A.S.)). Guadalupe Island, south end.

M26 (Loc. 32819 (C.A.S.)). Melpomene Cove, Guadalupe Island, 10-18 fathoms, rocky bottom, December 7, 1946.

M27 (Loc. 32747 (C.A.S.)). Off south end of Guadalupe Island, between Outer and Middle Rocks, 26 fathoms, coralline, rock bottom, December 9, 1946.

The following is a complete list of the known marine mollusks from Guadalupe Island. The letter "S" accompanying the species indicates those previously recorded from Guadalupe Island in the Proceedings of the California Academy of Sciences, Series 4, Volume 19, Number 1, 1930, and the letter "W" indicates the species represented in the collection made by W. Williams.

Molluscan Fauna of Guadalupe Island.

Gastropoda:

Acteocinidae

Acteocina angustior Baker & Hanna S-W

Retusa harpa Dall S

Tylodinidae

Tylodina fungina Gabb W

Siphonariidae

Williamia peltoides Carpenter S-W

Turridae

Kurtzina beta Dall S

"Mangilia" interlirata Stearns W (new southern range)

Marginellidae

Cystiscus jewettii Carpenter S-W

Cystiscus politulus Dall S-W

Hyalina californica Tomlin S-W

Cypreolina pyriformis Carpenter S-W

Mitridae

Mitra catalinae Dall S (new southern range)

Mitramorpha filosa Carpenter W

Nassariidae

Nassarius insculptus Carpenter W

Columbellidae

Anachis subturrita Carpenter S-W

Aesopus arestus Dall S

Aesopus eurytoides Carpenter W

Aesopus sanctus Dall W

Muricidae

Ocenebra gracillima Stearns W

Ocenebra poulsoni Carpenter W

Thasinae

Acanthina lugubris Sowerby W

Epitoniidae

Epitonium californicum Dall W

Pyramidellidae

Odostomia (Chrysallida) clementina Dall & Bartsch S

Odostomia (Chrysallida) decepatrix Dall & Bartsch S

Odostomia (Chrysallida) pulcia Dall & Bartsch W

Odostomia (Chrysallida) virginialis Dall & Bartsch S-W

Odostomia (Miralda) aepynota Dall & Bartsch S-W

Odostomia (Iolaea) eucosmia Dall & Bartsch S

Odostomia (Ividella) navisa Dall & Bartsch S-W

Odostomia (Ivara) turricula Dall & Bartsch S

Odostomia (Menestho) amilda Dall & Bartsch W

Eratoidae

Pusula solandri Sowerby W

Erato columbella Menke W

Ranellidae

Bursa californica Dall S

Bursa calcipicta Dall W

Triphoridae

Triphora pedroana Bartsch S-W

Cerithiopsidae

Cerithiopsis guadalupensis Strong S

Cerithiopsis oxyis Bartsch S-W

Seila montereyensis Bartsch S-W

Metaxia diadema Bartsch S-W

Cerithiidae

Diastoma slevini Strong S

Alabina jordani Strong S-W

Bittium interfossa Carpenter S

Caecidae

Fartulum hemphilli Bartsch S-W

Caecum californicum Dall S

Vermetidae

Aletes squamigerus Carpenter W

Spiroglyphus lituellus Morch W

Littorinidae

Littorina planaxis Philippi S-W

Fossaridae

Iselica fonestrata Carpenter S

Litiopidae

Alaba jeanettae Bartsch S

Barleeiidae

Barleeia californica Bartsch S-W

Rissoidae

- Amphithalamus inclusus Carpenter S
- Amphithalamus tenuis Bartsch S
- Nodulus Kelseyi Bartsch S
- Alvania aequisculpta Keep S-W
- Alvania cosmia Bartsch S-W
- Alvania oldroydi Bartsch S-W
- Alvania purpurea Dall S-W

Anaplocamidae

- Jeffreysia bakeri Strong S

Rissoinidae

- Rissoina californica Bartsch S-W
- Rissoina clao Bartsch S
- Rissoina guadalupensis Strong S-W
- Rissoina lowei Strong S-W
- Rissoina willetti Strong S-W

Hipponicidae

- Hipponix antiquatus Linne S-W
- Hipponix tumens Carpenter S-W

Crepidulidae

- Crepidatella lingulata Gould S-W

Acmaeidae

- Acmaea digitalis Eschscholtz S-W
- Acmaea limatula Carpenter W
- Acmaea paleacea Gould S-W
- Acmaea pelta Eschscholtz S-W
- Lottia gigantea Gray S-W

Phasianellidae

- Tricola pulloidea Carpenter S-W
- Eulithidium rubrilineata Strong S-W

Turbinidae

- Astraea undosa Wood S
- Astraea lithophora Dall W
- Astraea, species W
- Homalopoma carpenteri Pilsbry W
- Homalopoma paucicostatum Dall S-W

Liotidae

- Lotia fenestrata Carpenter S
- Liotia californica Dall W
- Arene acuticostata Carpenter S-W

Trochidae

- Norrisia norrisii Sowerby S-W
- Tegula gallina Forbes S-W
- Tegula regina Stearns S
- Calliostoma splendens Carpenter S
- Calliostoma, species W
- Margarites acuticostata Carpenter W
- Margarites parcipicta Carpenter S-W

Vitrinellidae

- Circulus rossellinus Dall S
- Teinostoma invallata Carpenter S-W
- Teinostoma supravallata Carpenter S-W

Haliotidae

- Haliotis californiensis Stearns S
- Haliotis corrugata Gray S
- Haliotis cracherodii Leach S-W
- Haliotis fulgens Philippi S

Fissurellidae

Fissurella volcano Reéve W

Pelecypoda-

Arcidae

Arca bailyi Bartsch S

Glycymeridae

Glycymeris guadalupensis Strong S-W

Philobryidae

Philobrya setosa Carpenter S-W

Mytilidae

Crenella divaricata Orbigny S-W

Pectinidae

Hinnites giganteus Gray W

Thraciidae

Thracia diegensis Dall W

Astartidae

Bernardina bakeri Dall W

Carditidae

Glans carpenteri Lamy W*Milneria kelsoyi* Dall S*Milneria minima* Dall W

Chamidae

Chama pellucida Broderip S-W

Lucinidae

Lucina californica Conrad S-W

Leptonidae

Kellia laperousii Deshayes W

Veneridae

Ventricola fordii Yates W*Transennella puella* Carpenter S-W*Psephidia cymata* Dall S-W

Tellinidae

Tellina pacifica Dall W

Corbulidae

Grippina californica Dall S

Scaphopoda:

Dentaliidae

Siphonodentalium quadrifissatum Carpenter S-W*Cadulus fusiformis* Pilsbry & Sharp S

September 25, 1954

Dear John:

Regarding some of our conversations concerning the value that the skin-divers might have as benefits science, you might be interested in hearing about a recent find by Mr. John F. Croil Morgans of the University of Capetown, South Africa.

Earlier this year Mr. Croil Morgans was engaged in the study of underwater life in some of the coastal lakes near Lourenco Marques, Portugese East Africa and managed after great difficulty to get several eel-like fish from holes in the bottom of the lake.

Aware that these forms were unlike any fish known in South African waters, he sent them to Professor J.L.B. Smith, ichthyologist at the Rhodes University in Grahamstown, South Africa.

They were described as a new genus and species; Generic name being given as "Croilia" after Mr. Morgans. Professor Smith noted that these were a kind of "missing link" between normal shore fish and types of fish that live permanently in the dark in deep burrows in the mud.

This diver is engaged in a research program into the estuaries of South Africa under the direction of the professor of Zoology at the University of Capetown, Professor J.H. Day.

Simultaneously he is working for his doctorate on the ecology of the sea to twenty fathoms. His work has been hampered by cold, rough, dirty water and the lack of companions so necessary for a safe diving program.

Recently, Mr. Morgans was on a month's diving expedition to the islands of Greece. This expedition was an archaeological search for ancient galleys and sunken cities sponsored by the London, England "Sunday Times".

For the information of your readers, this diver is interested in corresponding with persons having mutual interests. Possibly a little "publicity" in the "Minutes" might prove beneficial.

My diving is progressing slowly but surely. Tomorrow, I am going on a trip to Anacapa Island and hope to "sit" on the bottom and see how many rocks I can turn over. I hope to add some of the interesting juvenile forms of Haliotis to my collection in this manner.

I have been having fair success in exchanging with foreign correspondents for species of this genus. Well known, as well as scarce, species keep coming in and also, I have quite a bit of unidentified material with part of this looking as if it might be undescribed.

As you know, I am a prolific letter writer and would welcome hearing from any of your readers that could be of aid to me. In particular, I am concerned with growth series of Haliotis and any information as to their ecology, taxonomy and distribution as to species.

At the present time, I have little other than this genus for exchanges, but, through the use of my "Aqua-lung", I will soon have access to many other forms of life interesting to the collector.

Sincerely yours, Damon Burford

~~Tridacna~~ TRIDACNA

Letter to Jim Bailey from a friend in Australia:

I have mucked about quite a lot with the giant clams and my opinion is that it would be nearly impossible to get ones foot in, even if it were a big shell.

The "whopper" (about 5 feet long) I examined was open not more than four inches (4) and it took about a dozen jabs with a piece of pine to get him to close.

When open the shell is like this:



with a gap of four inches and about eight inches between flutes. A man would just about have to force his foot in.

The smaller shells close very quickly and a man could get his fingers in them if careless. With the large shells I think the movement is too slow and the gaps too small to keep up with the stories one reads.

Murex pomum Gmelin and (Murex imperialis Lam.). On page 5 of this issue I made some comments about this race of M. pomum. Since writing those words I have had occasion to show this large lot from Venezuela to a number of local conchologists and compare them carefully with specimens from Florida and Cuba. The result is that I am now convinced that they are the same biological entity. However, the Florida collector is certain to be amazed at the size running up over 5" and with large globular body whorls. The variety of color forms is also interesting in these big ones. Some are colored with pink interior so that at a distance across the room almost any of us here would immediately say they were looking at a specimen of the west coast Murex erythrostoma Swainson (M. bicolor Val.), another will resemble very closely our Murex regius Wood from the south on this coast showing the glossy black at the aperture and pink interior, others resembling M. regius will have the black and orange interior, others with no black and an orange interior, and still others with almost a lemon yellow interior at the aperture. It is a good thing some of our enthusiastic splitters do not have these or we would have a dozen different names.

Some of my correspondents to whom I have sent specimens have also commented on them. For example Mr. Heathcote M. Woolsey comments " I am in receipt of the two Murex pomum. I have read over carefully everything that Clench says in " Johnsonia " about the species. I notice " in Trinidad specimens have a decidedly pinkish cast in the aperture; elsewhere the coloration is whitish or orange". The peculiarity of one of your specimens is that it has none of the typical dark spots, but I can easily imagine that this may have occurred in earlier apertures and has been eliminated by growth. I am sorry the operculum was not saved. They are both good specimens and I am glad to have them. I collected pomum in Tobago, which is very close to Trinidad, and they resembled the darker of these two specimens more than the pure pink one. The largest specimens I have ever gotten from the Caribbean is about an inch more in altitude than these two. Those who have collected pomum in Florida only wouldn't believe that it could grow so large"

** In conclusion I may add that all of my specimens from Florida and Cuba are more elongate than this lot. However, I am now labelling mine as Murex pomum Gmelin concluding that they are merely a giant race.

Pecten ziczac Linnaeus

Everything must grow large in Venezuela. I was amazed to see this species 4" to 5" in diameter, giants compared to Florida specimens.

NEW PUBLICATIONS

The current issue of Systematic Zoology, Vol. 3, No. 3, Sept. 1954 is devoted to a Symposium: Subspecies and Clines. I have found it of great interest. There are two papers on malacology.

The Occurrence of Clines in Molluscan Populations by William J. Clench. This is an excellent paper and should by all means be read by all contemplating the description of new subspecies. It is interesting that Dr. Clench mentioned one lot that we had up for discussion in the store here last week. We had sets of Thais haemastoma haysae Clench and Thais haemastoma floridana Conrad. Typical specimens of the former from Louisiana were easily separable at a glance from those from Florida, but we also had several large lots that might well go in with either or neither and settled the matter by the simple expedient of replacing them on the shelves with no further comment.

Dr. Clench also mentions Cerion and writes "I know of no other genus of land mollusks that renders less satisfaction to the taxonomist interested in natural groupings and relationships." In the slang "He can say that again." Some time ago I sold a series of these things running almost to 150 lots including the host of subspecies, no end of even paratypes, and a file of Maynards paper in which he described hundreds of them. In handling them occasionally a specimen would get out of the mount. Put it back in the right lot - ? that is a real laugh. It might be possible for the specialist but I have my doubts.

✻ The other paper in this issue of Systematic Zoology is The Problem of Oyster Taxonomy by Gordon Gunter. In this paper Gunter definitely takes issue with Hedgpeth's paper also in Systematic Zoology earlier this year. Gunter's paper is so logical and well written that after reading it one must conclude that his paper is convincing. Gordon Gunter is Research Scientist in marine zoology and Director of the Institute of Marine Science, the University of Texas at Port Aransas.

The other papers in this symposium are Mammalogy by W.H. Burt, Ornithology by C.G. Sibley, Herpetology by C.M. Bogert, Entomology by T.H. Hubbell. All are of great interest to anyone interested in taxonomy.

Nuova revisione delle conchiglie marine di Sicilia - by Dott. Ing. Ottavio Priolo. Memoria VII Estratto da Atti della Academia Gioenia di Scienze Naturali in Catania 1954. This paper is devoted to the species of Alvania and Rissoa - Folio 37 pages. The full synonymy of each species is given with a discussion.

Directions for Cleaning and Keeping a Collection of Shells in a Workable Condition by Stanley T. Brooks - Carnegie Museum.

An excellent mimeographed paper in 10 pages.

Shells and Civilization by Stanley T. Brooks, Carnegie Museum.

An interesting booklet on ethnocpnhology.

Notas Sobre Scaphella (Aurinia) atlantis Clench de Cuba.

Por Alfredo de la Torre - Revista la Sociedad Malacologica 1952

Tres Nuevas Formas De Moluscos Del Genero Liguus por Alfredo De La Torre - same 1953

Nuevos Moluscos Cubanos De Los Generos Cerion y Chondropema por Alfredo De La Torre - same 1954

Nuevo Helicinido De La Provincia De Matanzas por C.G. Aguayo y Alfredo De La Torre - same 1954 - "Eutrochatella chrysostoma aed.

Systems of the Volutidae by Henry A. Pilsbry and Axel A. Olsson
Bulletins of American Paleontology Vol. 35, No. 152, Sept. 7, 1954.

A booklet of 37 pages and 3 plates. While this is published as a Bulletin of Paleontology the paper discussed the entire family both Recent and Fossil. The work is largely based on radular studies and the protoconchs. The work is of great interest to all interested in the study of the Volutidae. The groups are keyed out according to radular characteristics, and the result is a bit amazing at times when genera with vastly different shell forms are grouped together and others with very similar shells are separated.

** This booklet is entitled to a great deal of serious study before an adequate review could be written.

A New Eulimnadia from the Rice Fields of Arkansas with a Key to the American Species of the Genus. (Conchostraca, Limnadiidae). by N.T. Mattox- Tulane Studies in Zoology, Vol. 2, No. 1, Sept. 14, 1954.

Of course, these are phyllopods and do not belong in any list of molluscan literature, other than the fact that these shelled crustaceans are often mistaken for mollusks by amateur collectors.

Catalogue and Notes on the Gastropod Genus Busycon by Elton L. Puffer and William K. Emerson. Proc. ~~WXXXXXXZXXMMX~~ Biol. Soc. Wash., Aug. 5, 1954. A paper of 37 pages with full discussion of all species both Recent and Fossil.

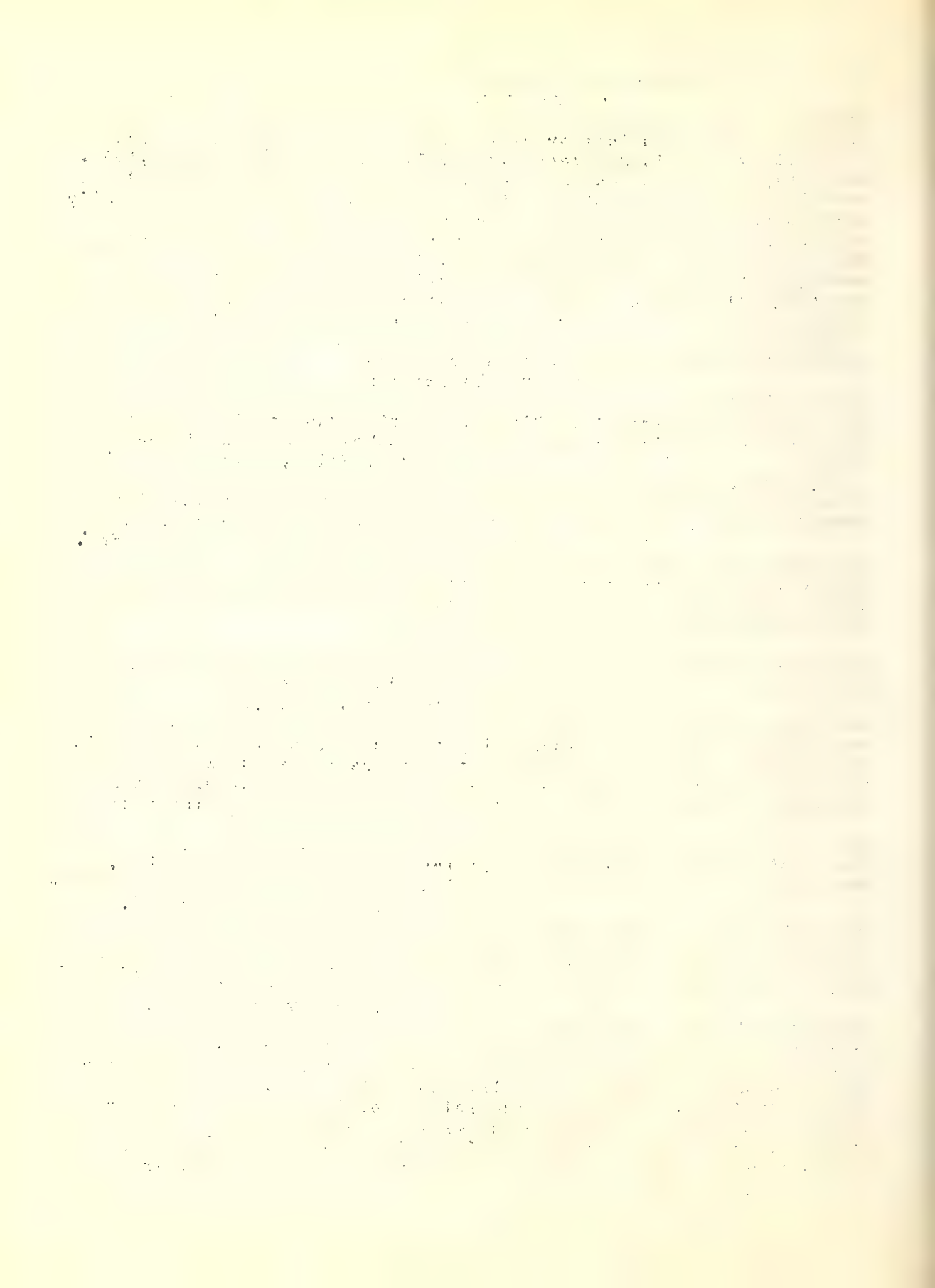
Notes on the Scaphopod Mollusks: Rectifications of Nomenclature By William K. Emerson Proc. Biol. Soc. Wash. Aug. 5, 1954

Max Hammerschlag- Mr. Hammerschlag of South Orange, N.J. died this year May 24. Mr. Hammerschlag was 82 years of age but was an enthusiastic conchologist up to the time of his death. His extensive collection of fine shells could be compared with the best in this country. We will miss his interesting letters.

Dr. C.F. Menninger passed away in Topeka, Kansas last November. Dr. Menninger had celebrated his 91st birthday and was an enthusiastic student and collector of shells to the time of his death.

The University of California Museum of Paleontology (Berkeley) has received from William K. Emerson a collection of Recent Western Pacific mollusks. This collection, which totals in excess of 1000 lots, is being incorporated into the University Collection.

The New York Shell Club Notes No. 8, July 1954 at hand. We are pleased to see this again, the first issue since 1952. One comment is of interest "On a recent visit to the U.S. National Museum, we saw in their library a large folder boldly labelled New York Shell Club Notes. There was also a folder for the Minutes of the Southern California club and various other publications. We are sorry that ours was so thin; but with the help of all members we'll fatten it up."



MINUTES OF THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA.

October 5, 1954

Miss Ruth Coats, president, called the meeting to order at 7:30 PM and welcomed an attendance of thirty-five, including several guests.

A nominating committee composed of the following was announced by Miss Coats:

Mr. John Q. Burch, Chairman

Mr. George Kankoff

Mr. Emory Chace

A very short business meeting was held due to the length of the evening's program. Our speakers of the evening comprised six of the seven members of Miss Coats beginners' group that was formed last year. I, the seventh member, was excused supposedly because of past accomplishment, but, in reality because of lack of preparation.

I, along with the other members of this group wish to go on public record, as being appreciative of the time Miss Coats gave to us and to the graciousness of our host and hostess this past year; Mr. and Mrs. John Q. Burch in whose home our monthly meetings were held. Thanks is also due to Mr. Emory Chace for conducting one class on Chitons.

Miss and Mrs. Thurlow opened the program and spoke on Gastropods and the many terms or adjectives used in describing them. Many large drawings by Miss Thurlow, a commercial artist, were made on the blackboard as well as poster size drawings, which were used to illustrate their discussion.

Mr. and Mrs. Woglum chose to speak on the Pelycepods and entitled their paper "Conchological Dentistry". As beginners we were unaware of the importance of "teeth" in identification of Pelycepods. However, this importance was brought out and illustrated with many slides to show the groups that these animals fall into.

M Mr. and Mrs. Crawford N. Cates discussed "Some Phyllonotus of the Gulf of California." As explained, this group was not covered in its entirety but limited to the more common species that the average collector has access to. Slides were used to advantage to illustrate this paper also. These slides showed individual specimens as well as the basic "pink" and "black" groups.

The meeting was adjourned at 9:45 PM to allow the group to examine the large amounts of material brought by the evening's speakers to further illustrate their papers. D.L. Burford, Secretary.

MINUTES 143

NOV 1954

CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA

Subscription \$2.50 per year

We are now meeting at the Los Angeles Museum, Exposition Park, Los Angeles, California, the first Tuesday of every month at 7:30 P.M. All interested persons are cordially invited.

*** The Christmas meeting is the only exception to the above. The next meeting will be held on the evening of Dec. 7, Tuesday as usual at 7:30 P.M. All members are invited to meet at the home of the Burches at 4206 Halldale Ave., Los Angeles. It will be a social meeting with the customary exchange of gifts other than the annual election of officers for the coming year.

Please mail all news to your editor,

John Q. Burch,
1584 W. Vernon Ave.,
Los Angeles 62, Calif.
Telephone Ax 3-5710
Home Phone Ax 2-7965

A New Publication

East African Cowries by B. Verdcourt. This booklet has just been received and will be of interest to all interested in this genus. An interesting paper with 17 plates illustrating 96 Cypraea. An additional plate showing the characters for study.

** Copies of this paper may be had from John Q. Burch for \$1.00 while the limited supply holds out.

An Up-To-Date Systematic List of 3200 Seashells from Greenland to Texas: Translation, Explanation and Gender of Their Names by Henry Poirier. 1954 215 pages. *** This should be welcomed by all. Johnson's list is no longer available and is badly out of date in any event. A fine check list. Copies from Burch \$3.95

Classification of Pelecypoda

Presented at the Oct. 5, 1954 meeting of the Conchological Club by R.S. and Mabel B. Woglum.

Our first interest in shells came when my husband was stationed in Guaymas, Sonora, a few years ago, doing experimental work on BLACK FLY, a pest of citrus. This worst enemy he found in India many years ago and it had found its way to the west coast of Mexico where it threatened the California citrus industry. We made Guaymas our home for many months on the beautiful Bocochibampo Bay.

Shells of many varieties were numerous and there we found the first live shells, also learning the tedious task of cleaning, but the result created new interest and we were off to a new hobby. During our stay there we met Mrs. Burch and Dr. Josiah Bailey, who really were collecting.

During the past year Miss Coates has tried to break us of the casual collecting and picture book stage into something more serious. We hope her effort has not been too disappointing.

Perhaps the most surprising event in shell study was to find a row of teeth. The title of this paper comes with an apology to the more advanced and serious minded members under the heading "Conchological Dentistry".

This paper concerns the bivalve shells or pelecypods in which the hinge appears to be a very important tool for identification purposes. According to Keen, our West Coast authority on this group, the bivalve hinge is the most useful single feature of the shell for identification. Tucker Abbott in his book "American Seashells" writes that the hinge is one of our most important identification features in the bivalves and often many hours of fruitless search can be avoided when the major types of hinges and their various parts is understood.

Since this is an amateur discussion by amateurs we are sure the seniors of conchology will bear with us if we start with fundamentals and this we will do by a primary discussion of a bivalve shell. The two valves of which a bivalve shell consists are bound together usually with a brown chitinous ligament and usually hooked together with a hinge which is furnished with interlocking teeth. The valves are kept closed by powerful internal adductor muscles. The apex of the shell is termed the umbo or beak. The hinge and its teeth, on which this paper is based, are usually just below the beak on the inside of the valve. The teeth immediately below the umbo are distinguished as cardinals and those on either side of the cardinals as the laterals. The valves are known as right and left and it is important to distinguish them and to determine their anterior and posterior ends. The ligament is usually posterior to the beaks and the lunule anterior to the beaks. When a clam is held in the hands in the position (In which I am holding it) the right valve falls into the right hand and the left valve into the left. The posterior part is on the same side as the ligament and the anterior corresponds to the lunule side. The pallial sinus, if present, points to the anterior side of the shell. With this preliminary background my husband will now attempt to present the different types of dentures, illustrating them with slides.

The leading authority in this country on dentition of pelecypods has been a paleontologist and malacologist by the name of Dall, whose major contributions occurred in the early part of the last century or more than 50 years ago; yet whose classification is still largely followed today, sometimes in modified form. As a result of his studies on hinge structure Dall set up a classification of bivalves to which we will refer later.

The hinge of a bivalve consists of two more or less rigid edges of shell united by a flexible membrane or ligament. The rigid edges or cardinal margin of the valves may be simple or modified by the presence of interlocking processes known as teeth and sockets that lie along a straight or curved line and whose purpose is to regulate the direction of the valves in opening and closing. Teeth are present in both valves and fit into corresponding sockets, in the opposite valve. In most shells the valves can be separated without difficulty but in a few they cannot be
(Cont.)

Classification of Pelecypoda
(Cont. fm. Page 2)

disarticulated without breaking some of the teeth. The teeth, sockets and certain other closely associated structures are collectively termed dentition and shells lacking dentition are described as edentulous. The number, nature and arrangement of components of the dentition are important for discrimination of shells and the more important types will form the major part of this paper.

The dorsal or cardinal margin of the valves of denticulate pelecypods is generally thickened which bears the numerous tubercles and corresponding pits, ridges, troughs, or teeth and sockets. As stated previously the term dentition applies collectively to these irregularities whereas the term hinge is customarily used to designate the whole interlocking mechanism. It has been suggested that the first hinge teeth developed from crenulations and irregularities on the dorsal margins and that they served primarily for preventing the valves from shearing over one another.

In its earliest development, paleontologists tell us that the dental apparatus consisted of little more than a series of slightly modified irregularities of the cardinal margin. Soon, however, two quite different patterns of teeth arrangement evolved, called the Taxodont and Actinodont types. These will be illustrated later but for the present it can be said that the Taxodont type has persisted up to the present and is characteristic of many modern species and genera, but does not seem to have given use to other patterns. On the other hand the Actinodont type of dentition, whose teeth radiate downward from the umbo, provided an arrangement of teeth and sockets that was readily modified, and from the early type a long series of modifications have arisen. In the early Actinodont dentition the centrally located teeth were short and likely to be heavy, whereas the outer or posterior ones were elongated and slender. Modification tended to follow two general lines: (1) Reduction in the number of teeth. (2) Increase in size and projection of those remaining. By progressive differentiation a dentition evolved that consisted of a few of the older teeth as strong cardinals underlying the ligament and a group of new teeth, the laterals, lying beyond the limits of the ligament. This type of dentition was termed the heterodont and is characteristic of the vast majority of pelecypods.

At this point we will turn to illustrations for clarification of some of the statements we have made. First we will have a slide of shell terminology. (Slide #1, valves, anterior-posterior.) Most heterodont pelecypods have exterior ligaments. It appears that most of the earliest classifications of the pelecypods were made by zoologists who based their major divisions on the soft parts of the animal. I mentioned that the first man in America to work seriously on the teeth, was Dall. As a result of his dental studies of pelecypods he set up a classification of the whole group based in large part on teeth. We will follow Dall's classification which is fully set forth in USNM bulleting #112, "On the Mollusks of the Northwest Coast of America." (1921). In this Dall divides the class pelecypoda into three orders; namely: Prionodesmaceae, Anomalodesmaceae, Teleodesmaceae.

The next slide will show these orders and his classification into suborders. (Slide #2.) Order Prionodesmaceae; suborder Taxodonta, Schizodonta, Isodonta, Dysodonta. Order Anomalodesmaceae, Order Teleodesmaceae, Teleodonta, Diogenodonta, Heterodonta, Cyclodonta, Asthenodonta. Dall presented a dentition to represent each of these suborders and this dentition has been followed in general by malacologists and paleontologists with some modification. Miss Keen of Stanford follows Dall in general in her bulletin on West North American Pelecypods. (Slide #3.) Arca, tuberculosa. Taxodont, with a hinge composed of many similar alternating teeth and sockets; frequently forming a long series. (Slide #4) Shrock P. 387. Schizodont. Divided Teeth. Dentition not well developed; teeth more or less prominent but variable in size and shape and often obscurely divided into sub umbonal and lateral. Usually heavy and amorphous. A development from the early actinodont type; teeth radiating down from umbo. (Slide #5) Shrock p. 385. (Slide #6) Fuscona undata.

(Cont.)

Classification of Pelecypoda
(Cont. fm. Page 3)

Isodont. Isodont dentition consists of about equally developed teeth. Each valve has two main teeth, and these are so arranged that two sockets and an anterior and posterior lateral are near the middle of the hinge line of one valve, and two teeth with one anterior and one posterior socket lie near the middle of the hinge line of the other valve. The teeth are slightly curved and fit into corresponding sockets; curved. In shells of extreme development of this interlocking relation as in *Spondylus* it may not be possible to separate the valves one from the other without breaking some of the teeth. (Slide #7.) **Spondylus.** In more typical development, as in *Pecten*, the teeth are slender ridges. These shells usually have a centrally placed resilifer that holds the internal ligament or resilium. (Slide #8) **Pecten.** Shrock. (Slide #9) **Pecten.** Here we have the original taxodont replaced by a hinge structure derived from two ridges originally diverging below the beak. This becomes in the most specialized forms an elaborate interlocking arrangement of two concentric pairs of teeth and sockets. **Spondylus.** In less specialized as *Pecten* the primitive hinge becomes obsolete and the crura only partially developed. **Dysodont.** Shells characterized mainly by absence or near absence of hinge teeth. Teeth feebly developed; with a series of denticles along the dorsal margin from which they arise as ornamentations. **Mussels.** (Slide #10) Abbott p. 349. **Heterodont.** In general Heterodont teeth typify the teeth of the Order Teleodonta. It is characterized by one or more hinge teeth on the dorsal margin; the cardinal teeth radiate from that part of the hinge plate immediately below the beak; the lateral teeth (not invariably present) are anterior or posterior to the cardinal area. The cardinal teeth are disposed vertically or obliquely to the hinge line whereas the laterals are approximately parallel to the hinge line the ligament is external. Some paleontologists feel that the term Heterodonta is too broad for if construed strictly it would include all dentiferous pelecypods. At any rate the bivalve *Tivela* is supposed to exemplify it. (Slide #11) *Tivela stultorum*, the Pismo clam. **Heterodont Dentition.** Two French paleontologists Munier-Chalmas and Bernard originated a system of notation for the heterodont dentition, a system commonly called the Munier-Chalmas formula, in which the teeth are numbered according to their position and supposed origin, using Arabic numerals for the cardinals and Roman numerals for the laterals; even numbers for the left valve and odd numbers for the right valve. Cardinal teeth are regarded as a series of chevrons radiating from the beak about a central or pivotal tooth. If this is in the right valve it is numbered (1). On each side are the two limbs of tooth 3 (3a for anterior, 3b for posterior) If the pivotal tooth is in the left valve it is numbered 2 and tooth 1 is considered wanting. Few genera have all the possible hinge elements developed. The pivotal tooth is lacking in shells having a single cardinal in each valve here the teeth are arbitrarily numbered 1 and 2, or 2 and 3. Lateral teeth are designated by A for Anterior and P for posterior. Sockets are noted by an accent mark (') following the number of the tooth which would properly engage the socket. There have developed various methods of applying the formula of Munier-Chalmas. The Myra Keen Formula. To me this appears the preferred and simplest. (Slide #12) Keen p5. Explain right and left valve. (Slide #13) *Tivela*. Shrock and Twenhofel Formula. (Slide #14) Chart S&T, p. 384. In this formulation sockets are noted by a (-) between numbers and lateral teeth by short dashes parallel to the hinge. We will now continue with the dentition. **Teleodont.** Teleodont represents the highest development of dentition among the pelecypods and is characterized by a few large cardinal teeth with or without laterals. Roughened lateral areas and accessory lamellae are also present in some shells. (Slide #15) *Venus*. (Slide #16) *Merceneria*. Keen, p. 18. **Diogenodont.** Dentition consists normally of one or two laterals and three or less cardinals in any group. (Slide #17) *Astarte*, Keen p. 16. **Cyclodont.** The dentition is characterized by the lack of a flat hinge plate and the teeth seem to spring from the cavity of the beak and to be twisted into line in the cardinal margin. This tooth development is believed to be the result of torsion of the umbonal extremity of the valves over past ages.

(cont.)

Classification of Pelecypoda

(Cont. fm. Page 4)

(Slide #18) Cardium shell. (Slide #19) Americardia Keen. Asthenodont. Are borers and burrowers in which the teeth have become obsolete from disuse. (Slide #20) Pholas, Keen p. 22) (Slide #21.) Platydon, Keen p. 11. Anomalodont. Dentition, when present, characterized by teeth that are quite small or wanting altogether. A group mostly edentulous in the weak valve but denticles may be present and a calcareous buttress or ridge inside just under the beak serving to reinforce the hinge process. The internal cartilage specialization assumes a function which is assumed by teeth in groups without internal cartilage. (Slide 22) Periploma, Keen, p. 11. Those of you who are taxonomists are well aware of the wide range of family and genera separation possibilities as based on dentition. These possibilities, when examined carefully, may appear greatly exaggerated. We are concerned with four elements: namely cardinal teeth, lateral teeth, right valve, left valve. To determine the differentiation possibilities in genera separation with these four elements we drew up a table of combination possibilities and the result was so astounding that I will take a minute to show it to you. (Slide #23) Genera separation as based on teeth.

We believe it is a true statement to say that at present the genera do not exist to include all the different combinations shown; the table is merely to show theoretical or hypothetical possibilities encompassed by dentition. But if the genera existed to include all these combinations of cardinals and laterals it could amount to 144.

Teeth are very commonly used by malacologists in some degree in synoptical tables for genera separation. A fitting example is well set forth in the proceedings of the Conchological Club of Southern California, #40, p. 10, in a paper given by Mr. Tom Burch entitled: "A Key to Leptonidae Adapted fm. Keen's Key to Pelecypod Genera." (Chart #24) Copy of Key.

POSSIBILITIES IN GENERA SEPARATION AS BASED ON TEETH.

		(Cardinals Only)	
<u>right valve</u>	<u>left valve</u>	<u>Total</u>	<u>Diff. Combination</u>
0 teeth	0 teeth		
	1 "		
	2 "	4	
	3 "		
1 "	0 "		
	1 "		
	2 "	4	
	3 "		
2 "	0 "		
	1 "		
	2 "	4	
	3 "		
3 "	0 "		
	1 "		
	2 "		
	3 "	4	
		Total	16 cardinal
		(Laterals)	
0 teeth	0 teeth	16	combinations
	1 "	16	"
	2 "	16	"
1 "	0 "	16	"
	1 "	16	"
	2 "	16	"
2 "	0 "	16	"
	1 "	16	"
	3 "	16	"
Total diff. combinations of teeth.		144	

We have attempted to show the dentition of pelecypods, which is often quite complex and confusing, and different authors are not in agreement as to the number and types that should be recognized. Some even maintain that there are but two types that should be recognized. Some even maintain that there are but two types that can be readily recognized, the Taxodont and Teleodont or Heterodont type. But ten different types of dentition have been recognized by the majority of investigators.

Using these as a basis the three orders of the bivalve class, the Prionodesmacea -a, Anomalodesmacea and the Teleodesmacea have been erected to include pelecypods with teeth along the hinge line. In general Prionodesmacea is characterized by the taxodont type or a repetition of similar teeth upon the hinge line as in Arca, or by the amorphous irregular dentition under the beak, the Schizodont group. These taxodont types are thought to be derivations of a primitive original taxodont type.

The Teleodesmacea order you will recall represents the well formed more permanent armature of hinge separated into distinct central cardinals and into laterals, of which Venus is an example. This is the heterodont or teleodont type.

The Anomalodesmacea order has the dorsal margin hinge plate more narrow and less definite than in the Teleodesmacea, and the armature of the hinge is feeble, often obsolete or wanting. In place of the teeth in this order there is an internal ligament associated with a resilium and housed in a pit structure called the reliquifer, or a spoonshaped apparatus called the chondophore, which opens the valves and holds them in place.

A New Publication

Conidae by T. Hartley being Publication No.6 of the Malacological Club of Victoria, Australia- dated January, 1954. Mimeographed, 11 pages, 3 pages of figures.

The author discusses the family at length not only for the systematic classification but the habitats in the field.

The author is disposed to consider the thirty former sub-generic names in the genus Conus as genera at this time.

The number of species, distribution both Recent and Fossil are discussed.

The eggs and methods of propagation are discussed from actual observations in the field.

The poison glands and methods of use are mentioned at some length. This part of the paper is of great interest and includes a number of original observations. The treatment of the bite by the natives of Australia is of interest.

*** This paper is priced by the club in Australia at two shillings. A limited number have been ordered and may be had from John Burch postpaid for 50/- or you may write to Australia for a copy.

Notes on Raising Sphaeriid Clams in the Laboratory by Grace J. Thomas
An interesting paper in Turtlox News for October, 1954

On Telescopium telescopium (Linne) and the description of a new species from P. Panaitan (Prinsen Island), Straits of Sunda by L.J.M. Butot. From Basteria 1954.

An excellent paper including 2 plates and a text figure. The author contributes a great deal of information about this well known genus.

A New Species of Gulella (Mollusca-Streptaxidae) from Tanganyika Territory by Bernard Verdcourt- Annals and Mag. of Nat. Hist., Nov., 1953.

November 2, 1954

Mr. John Fitch, Vice-President, called the meeting to order at 7:30PM and welcomed an attendance of forty-seven, including several guests.

Miss Bessie Faulkner, Treasurer, reported a paid membership of sixty-two for the year. This is a substantial increase over last year and we hope to show further growth in the coming year.

Among the guests welcomed was Dr. Myra Keen of Stanford University. Miss Keen reported the formation of a study group at Stanford. For the present, no officers are to be elected as this group is to be an impromptu but permanent study group with the first meeting scheduled for Sunday, November 14th. We, of the Conchological Club of Southern California, wish Dr. Keen and her group the best of luck for the future. This organization promises to be quite an active club with a present nucleus of over thirty persons.

Mrs. Jean Wilkins announced the Long Beach Shell Club's group field trip to Dana Point for Armistice Day, November 11th, at 2:00PM with a -1.5 tide to look forward to at 3:55PM.

The Burchs' kind invitation for the group to meet at her home for our Xmas meeting to be held December 7th., was accepted. All present at our November meeting that were interested in attending a Xmas party, exchanged names. We also indicated our particular interests in collecting so as to allow the person receiving our name an opportunity to give a gift of greater significance to the serious collector. Absent members should bring a shell gift if they plan to attend this meeting to be held at 4206 Halldale. Please be advised that we urge all to please sign their names on the package they bring in order that the recipient may give thanks to the proper person. As is the custom, refreshments will be served.

Of further interest to the group will be the announcement of the choices of officers for the coming year by the Nominating Committee. Further nominations, of course, will be accepted from the floor.

All members should make a point of being present at our January meeting to be held at the regular meeting place. Mr. John Fitch will give a full report of his recent three weeks trip with the Loma Linda School of Tropical and Preventive Medicine to the Marshall Islands. I have had a sneak preview of his collection from this location and know that all members regardless of collecting interests will gain knowledge of the fauna of this area by viewing over three hundred species of gastropods collected alive by Mr. Fitch. Slides in color will be shown of the area collected.

Mr. Volmer Jensen, speaker of the evening, gave a talk on the use of skin-diving equipment and the value of this type of material as a means of collecting specimens. Following this information, the speaker showed three reels of colored movies with most of the scenes being taken underwater by both still and movie camera. Guaymas, on the Gulf of California was the principal setting, with the waters of Catalina Island being featured also.

It was very interesting to be able to compare the striking differences in the fauna and flora of these two regions. I noticed most the difference in the type of flora with an absence of kelp from the Gulf being the most striking difference.

Mr. Leonard Bessom, a staff member of the Los Angeles County Museum, and also a member of our club, shared in the making of these movies that covered a three year period and several trips to Mexico.

In my opinion, one of the most interesting parts concerned the gastropods in the aquarium. Most movies taken underwater fail to show little if any movement of specimens while these shots of gastropods taken in an aquarium were full of movement and showed to advantage the striking colors of the animals that in many cases exceeded the beauty of the shells themselves. Such a lack of movement in underwater movies is not a criticism, as these shots are made usually in the brightest light available and as we know, these animals are almost entirely dormant in the daytime, hiding from natural enemies.

November 2, 1954

Sincere thanks go to both Mr. Jensen and Mr. Bessom for taking the time to show these movies to the group.

The meeting was adjourned at 9:45PM to allow the group to examine the diving equipment as well as the shells brought by the evening's speaker to illustrate his talk.

Also of further interest to the members and guests, was the fine collection of Cypraea brought by Mr. Fitch from the Marshall Islands. These were all very fine shells and many species were represented by growth series showing the changes or differences between juveniles and adults. D.L. Burford, Secretary.

New Publications

Basteria- Vol. 18, No. 3, 1954

De naam Dreissena, een nomenclatorische puzzle door A.M. Husson en L.B. Holthuis. * The lack of uniformity in the spelling of the generic name Dreissena Van Beneden, 1835 is discussed at length.

Het Genus Patella in Nederland door L.A.W. Lucas. * The author concludes that there are three species of the genus in the Netherlands

Notes on Ptychotrema (Ennea) bequaerti (Dautzenberg and Germain) by L.A.W.C. Venmans

Fisheries Newsletter (Australia) for Sept., 1954. There are a few notes dealing with mollusks. "Tasmania's scallop season (ended July 31) produced around 320 tons, about the same as the previous year... The catch was worth £170,000 to the fishermen."

*** The above note reminds me to ask what explanation there may be to the fact that the local scallop Pecten circularis aquis-ulcatus Carp. has become so rare that it may join such species as P. diegensis etc. in difficulty to get. The California Fish and Game are now enforcing a new law to protect this species in full. There is no bag limit. Even if you find one better let it lay unless you wish to find yourself on the inside looking out. The scarcity of this species is amazing to some of us old timers who can recall the seasons when it was almost impossible to walk in the upper estuaries of Southern California and not step on them.

Professor Jens Ostergard formerly of Hawaii was the house guest of the Burches for a full week recently. It was a delightful Cypraea week from morning until late at night studying the Burch collection and also visiting other fine collections throughout Southern Calif.

Dr. Myra Keen of Stanford University was the guest of the Burches while attending the GSA meeting here. Needless to add many of our problems in systematics were adjusted.

Dr. Curt Teichert formerly of the University of Melbourne but now with the U.S. Geological Survey in Denver paid us a visit during the G.A.A. meeting, as well as a host of other well known paleontologists.

Mrs. Kate Stephens- 1851-1954. Mrs. Stephens passed away on August 29th. Without a doubt the passing of Mrs. Stephens means the passing of the oldest conchologist on our coast. She was always an active student of shells and a supporter of our club and these Minutes up to the time of her death. She will be long remembered by the host of friends who knew her.

MINUTES 144

DEC. 1954

CONCHOLOGICAL

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CALIFORNIA

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FOR THE YEAR 1955

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Nomenclature Used in Identification of Gastropoda

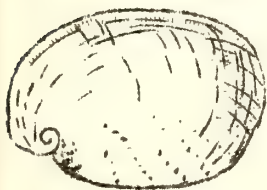
Presented Oct. 5, 1954 by Maye & Florence Thurlow.

I make no secret of the fact that my primary interest in Shells is their beauty. As a commercial artist, I am intrigued by color, form and texture wherever I find it, old books, beautiful embroidery, fine furniture, etc. But nowhere is inspiration more prolific and diversified than in the wonderful world of nature which surrounds us. Beautiful birds and insects, flowers and trees, mineral and fossils, all thrill me. But having always lived by the sea, and being more or less of a beachcomber at heart, it is only natural that my greatest love of all has been sea shells. And so I became a Conchologist, of sorts.

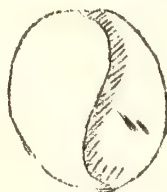
But I soon discovered that to talk to other shell collectors I had to learn the technical names in use among them. And in order to understand my own collection and increase its size, I too had to be able to use these terms. Fortunately, right at this time, a beginners class was formed by the Conchological Club of Southern California. Ruth Coates has been our fine teacher and Rose Burch has generously let us use her collection room as a study place of real inspiration. Working together we have all learned a great deal and exchanged many ideas. But what is more important, new avenues of study and research have been opened and made clear to us which should help increase our knowledge for years to come.

In our very first lessons we studied the nomenclature used in the identification of shells. I am going to talk about Gastropod (stomach footed mollusk) including snails, slugs, limpets and all forms that crawl in similar manner, (except chitons). While Mrs. Woglum will discuss the Pelecypod, including oysters, mussels, clams and other bi-valves. If what I am about to draw and explain seems dull and repetitious to some, as I am sure it will, please bear in mind that it is an effort on our part to catch up with the information you old timers already know and use scarcely without thinking. Through years of experience you have built up a set of mental images, descriptive vocabularies and sets of names enabling you to make preliminary assignment to a Family or genus so that with available literature, further identification to a species is not difficult. "Quick recognition of generic affinities are what marks off the expert from the novice," according to Myra Keen. So this is the way we have begun to catch up with you.

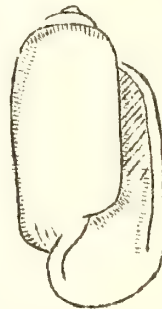
First, we learned to identify the general outline shape of Shells:



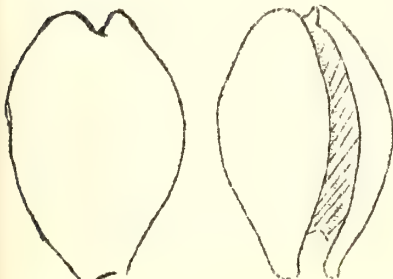
a. Auriform ear shape ex. *Haliotis*



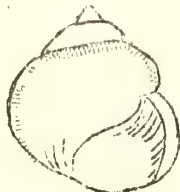
b. Bulloid Bulb shape ex. *Bulla*



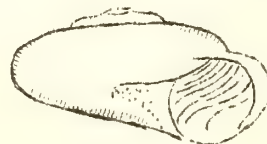
c. Cylindrical w/ parallel sides ex. *Coleophysis*



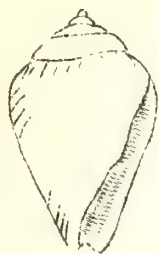
d. Cypraeiform oval, rolled inward from each side.



e. Globose sub-spherical or globular in shape. ex.



g. Lenticular lens shape ex. *Vitrinella*



i. Obconic inverted cone ex. Comus



h. Nautilic6ne spirally coiled in a single plane ex. Nautilus



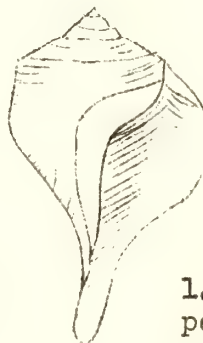
f. Fusiform spindle shape Swelling at center tapering to extremities. ex. Fasis



j. Obovate pointed oval shape greatest width above aperture, inverted ovate ex. Olivella



k. Patellate saucer or limpet shape ex. Patella, Acmae



l. Pyriform pear shape round & large at one end, gradually tapering at the other. ex. Fulgar



m. Trochoid somewhat conic shape with spire whorls flattened, top shape ex. Trochus



n. Turriiform tower shape high conical spire ex. Turitella



o. Turbate turban shape spire whorls low & inflated (as in contrast to Trochoid) ex. Astrea, Turbo

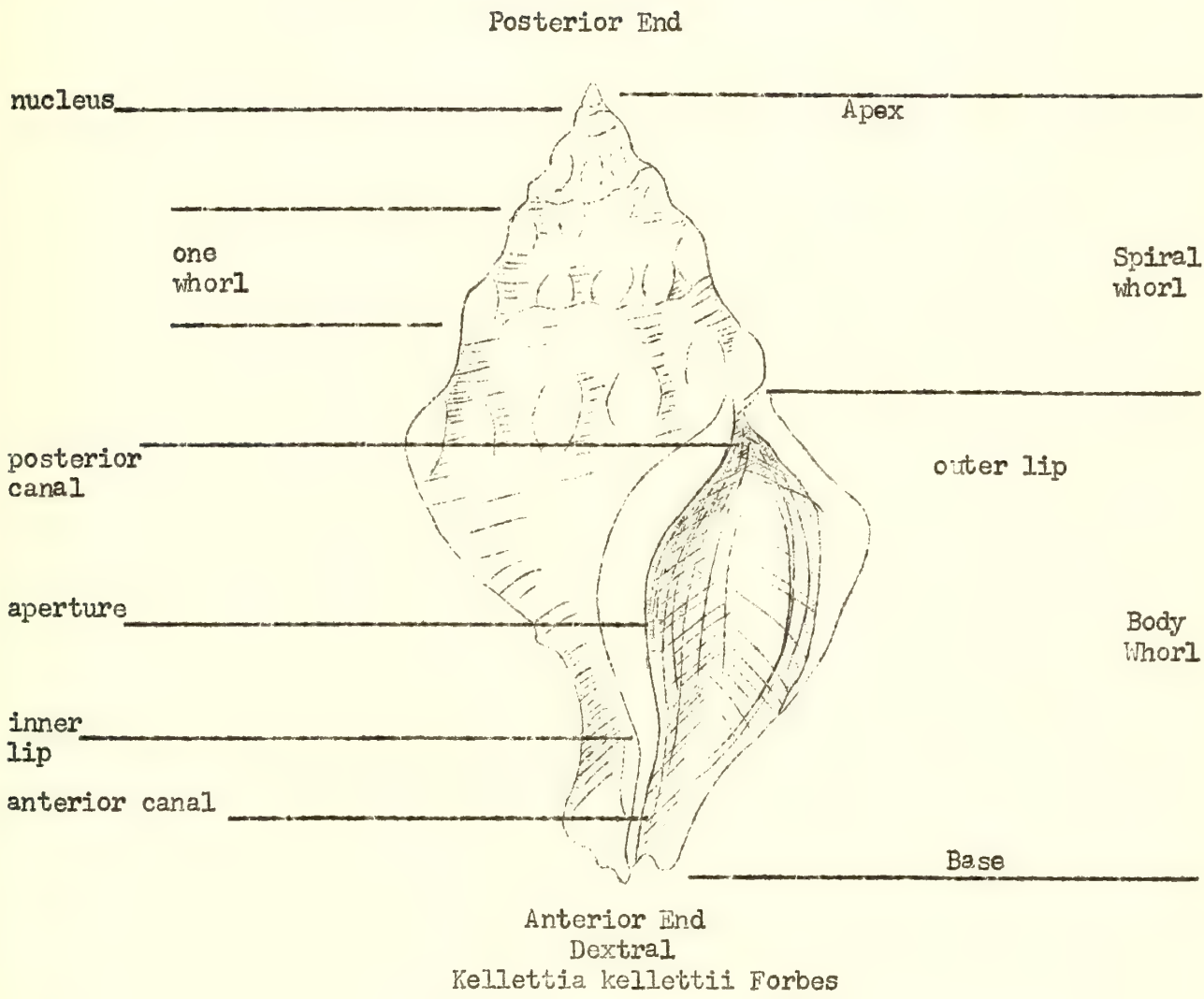


fig. 1

Second, we learned from composite pictures some of the most common identifying features of the Gastropod (see fig. 1.)

I. Nucleus The development of the shells of all species is not the same. But the typical snail when hatched from the egg has a few turns or whorls of his little shell already formed by a small quantity of muscas substance secreted by the animal during its embryonic development, called the nucleus. These remain, in part, at least, as the (II Apex) whorls nearest the summit, called the apex. Each turn, or complete 360 deg. revolution of the chamber around its axis (III Whorl) is called a whorl. Earlier and smaller whorls make up the (A. Spiral whorl) spire, known also as the spiral whorl, excepting and exclusive of the last formed, and usually the largest whorl (B. body whorl) which is known as the body whorl. This body whorl contains (IV Aperture) the aperture, sometimes called the mouth, which really is the opening through which the body of the animal is exposed to its environment. The outer edge of the aperture (A. outer lip) of a spiral is called the outer lip or the Labrum. While (B. Inner lip) the inner lip, called Labium is so grown to the central axis of the shell that it is not always distinct from the hollow or solid pillar formed by the junction of the inner walls of the whorls and around which the shell seems (V. Collumella) to revolve, called the columella. At the lower or last (VI Base) formed end of the shell, called the base, the aperture (VII Anterior canal) sometimes has a curved canal, called the anterior canal. Some have a canal at each end of the aperture, the one (VIII, Posterior Canal,) nearest the apex being called the posterior canal. Anterior is a designation from the Latin--"ante-before" meaning that this portion of the shell goes forward when the animal is crawling. Posterior, from the Latin "posterus--coming after", designates the portion of the shell which points backward. Many shells do not have any canal at all, but oval or nearly circular aperture. The animals with canals are mostly carnivorous while those with circular or entire openings are usually vegetable eaters. And lastly, the spiral of the shell (IX, Dextral) may coil clockwise in a dextral manner with the aperture on the right when the shell is held with the apex upward and the mouth toward the observer. Or it may coil in a sinistral manner, counter clockwise with the aperture to the left.

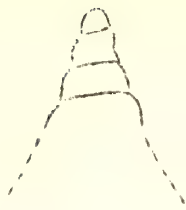
Third, we soon discovered that although familiarity with the general outline of a shell and understanding of the basic features enabled us to arrive at Family identification, the real hard work was in mastering the terminology for the innumerable variations that make possible the finer points of genera and sub-genera division. As I said in the beginning, this is what marks the expert from the novice. Now we know many of these terms but we have learned to use the dictionary and glossary to advantage as well. I shall explain a few of the outstanding variations of the basic features contained in the composite drawing (see numbered and lettered drawings as indicated for examples.)

I The nucleus, or the first part of the shell formed by the embryonic animal is not seen on all univalves. It is frequently eroded and sometimes is so small that a hand lens is needed to study its surface; again it is very prominent. Main types of classification are: bulbous--bulb-like, melo--enormous, trochiform-top shape, scaphelloid..

II. These nuclear whorls as they commence to grow from the tip or summit, being thought of as the apex which may be classified as: acute--Kelleitia(n), flat--Conus(i.) (p.), bulbous--Polynices(e.), low--Aulica cymbida Chem(g.), concave--Planorbia(h.), mammillary--Voluta(q.), depressed--Scissilabra(g.), immersed--appears sunken (b.), excurved--Functurella(s.), decollated--Truncatella: apex to depth of several whorls falls off. Hole then stopped up by septum, filling the cavity of the volution so as to exclude air (r.) (see illustration at bottom of page)



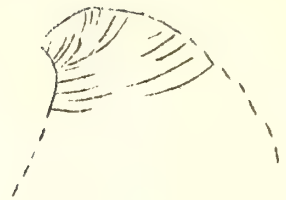
p.



q.



r.



s.

III. The Whorls continue to increase as the outer skin or mantel secretes the proper materials, depositing them on the aperture, soft at first, but soon hardening and firm, going round and round the central axis making the shell larger and larger. Pauses from time to time in the enlargement cause the appearance of growth lines(5.) parallel with the present edge. Or, while pausing thus, it may thicken the outer lip causing a ridge so that after fresh deposits of testaceous matter have increased the size, this ridge or varix, (3) as it is called may remain showing the position of the former aperture in various parts of the spire or body whorl.

They may come at regular or irregular intervals depending on the rest periods. In fact, they may be much more than just knobs (1.) or growth lines. Some shells quite outdo themselves by building fanciful ridges ornamented with knobs, spines, wrinkles frills or flared projections called laminations(2.)

A. The spiral whorls, which includes all volutions above the aperture is frequently different in structure from the rest of the shell, possibly because the ornamentation of rest periods come closer together when the shell is smaller giving the spire a distinct texture. It is often horny, may have reticulate(2.) (net like) sculpture, axial sculpture parallel to the axis of coiling, or spiral-sculpture following the volutions of the shell-sculpture. In shape it may be said to be: concealed(d.), elongated(n.), sub-micronate, conical(i.p.), excavated(b.), sub-calar, deciduous(r.), hidden(d.), tapering(f.h.), depressed(g.), involute(h.), ventricose (ol), elevated(l.), produced, delocated(r.).

The whorls or turns themselves are described in many ways. When rest periods are regular, the whorls are continuous, when they are irregular, the whorls are discontinuous. They are angulated (1.) keeled,(2.) coronated, distinct or indistinct. They are sometimes, as in cyprae, (d.) hidden by the last whorl. They begin at the apex and recon downward to the last or body whorl in counting. constricted, few(c.), ribbed, depressed(g.), globose(e.), subulate(n.), free, hidden(d.), rounded(3), distinct(m.), incurved, ventricose(5), disconnected, nepionic(g.), strongly keeled(2)-carinate.

The line of junction or seam between the whorls is called the suture and applies particularly to the line which marks the joining of the whorls in the spire. In most cases it is simple, but it may be: double or channeled(5) when accompanied by a parallel groove close to it, gutter. Marginated, when produced into a ledge or rib by the matter which fills up and covers it. Obsolete, so filled up as not to be visible. Enamelled, covered with callus. Impressed(3) Timid(p.)

IV. In addition to the shape and structure of the spiral whorl, sutures, and the ornamentation which may be formed during the rest periods, the aperture of the body whorl offers almost unlimited possibilities of variation. The shape is a distinction in itself. The peritreme, a term used to express the whole circumference of the aperture, may be said to be:

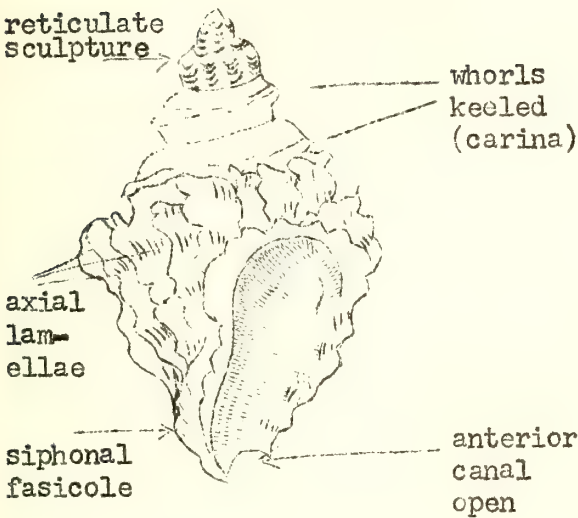


fig. 2

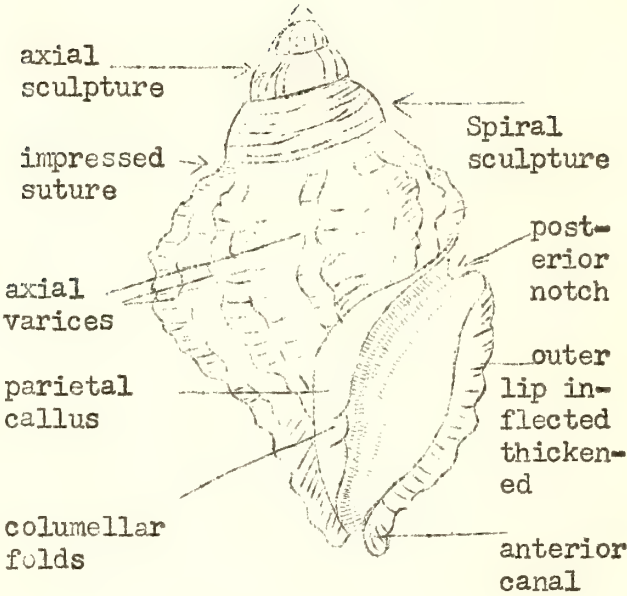


fig. 3

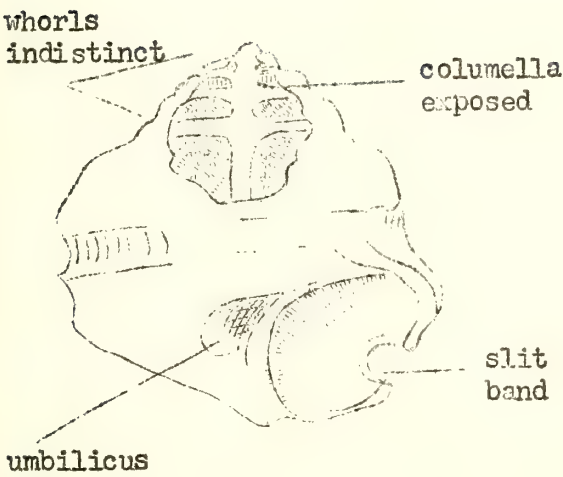


fig. 4

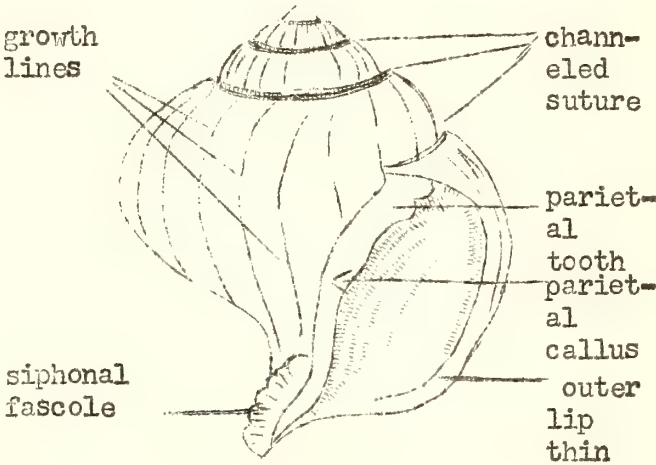


fig. 5

Aperture(Peritreme). alated-diffuse-Harpa(5), pyriform-Ficus(1), circular-Cyclostoma(n.o.), reniform-Phila, conical-Diadora(k.), rounded-Turbo-Epitonium(a.), emarginated-Voluta(3), transversly oval-Stomatia, linear-Trivea, Cypraea(d.), trigonal-Trochus-Astraea(m), long-Strombus(3), semi-lunar-Helicina-Neritina(3), narrow-Conus(i.), serrated-Nerita, oval-Tegula(e.), sub-effuse at base-Cionella, plicate-internal teeth, sub-quadrate-Turritella, posteriorly contracted-Chilina, wide-Haliotis-(a.).

A. Outer lip (Labrum) of this circumference may be said to be: alated-expanded, inflected-turned inwards, dentated-with large teeth, reflected-turned outwards, denticulated-studded with small teeth, sinus or slit band-(4) notch or embayment near center of lip, digitated-drawn into lobes.

B. Inner lip (Labium) or the

V. Collumella, solid pillar formed when the volutions join, may be said to be: decumbent, tortuous, vericose, detached, timid, have folds, straight, parietal callus-enamel on inside wall of aperture(3), parietal teeth- enamel on inside wall of aperture(5), fasciole-band or twist near termination of columellar pillar in gastropods that have a notched, siphonal canal.

Umbilicus, hollow that is sometimes formed when the volutions do not join each other at the inner lip. It may be said to be: bifid umbilicus-Nerita Cancellata, funicular-Cancellaria sericea, keeled-Margarites inflatula Dall, large-Turbo Delphinus, large & pervious-Turbo exasperatus, with spiral callosity-Natica, perforated-penetrates through the axis to apex, pervious axis-narrowly umbilicate, rimate-provided with a very small hole or crack-Littornia castanea.

Umbilicus may also mean cavity, circular depression or chink at the base of spiral univalves, affording lightness and strength. Those possessing it are termed perforate, those without, imperforate.

VI. At the Base of the shell the VII Anterior canal or notch which is drawn out in the form of a beak or tube at the base of some Gastropod (especially Murex) may be said to be: closed-Murex, Ocenebra, recurved, decumbent-Tibia, short-Ranella ranina, free--some Ranellae, straight, long-Murex haustellum, tapering(f), open(2), tortuous, posterior(3), truncated.

VIII. Gastrophod snails may coil to the right or left, Dextral or Sinistral.

IX. Some gastrophod also may have attached to its posterior foot on the upper surface, an operculum. This is a shelly or horny door, cover or lid formed from the nucleus and obliquely regularly deposited with laminated additions. When the animal returns into the shell, this portion enters last and sometimes seals it. In dextral shells, the operculum is sinistral. In sinistral shells it is dextral (with few exceptions) The number of turns in the operculum are made by the revolutions of the shell, and slowly formed by the shape of the aperture. Sometimes it is principally calcareous such as in Neritina, Nerita. Some are corneo-calcareous, an internal laminae of horn is a thickened layer of shelly matter (Turbo and Phasianella) incrassated. All corneous are Polynices, Trochus, Trophon. Opercular types are based on the direction in which the successive layers are deposited. nucleus central--spirally constructed, radiating whorls numerous-multispiral, Trochus, Skeneopsis alaskana, radiating whorls few-paucispiral, Cyclostoma, Littorina, flattened spiral-unispiral, scarcely one whorl-subspiral, Syneera translucens, concentric-Aulopoma, nucleus lateral--lammellated, nucleus at one side, not spiral lammellated, nucleus forming a terminal claw-unguiculated-Strombus, progress which radiates from nucleus--radiating.

X. And last of all, Gastrophod may have over the entire, outside surface a periostracum. It is the outermost of the three layers comprising the molluscan shell. It is composed of chitin, sometimes fibrous or hairy in texture.

In compiling this information, I am indebted to our teacher, Ruth Coates and to the following publications: "Illustrated Glossary of Gastropoda, Scaphopoda, Amphineura." by Beatrice LaRue Burch. "Illustr. Key to West North American Gastrophod Genera" by Myra Keen & John C. Pearson. "West Coast Shells" by Joshua Keep.

A Few Random Thoughts By John Q.

I recall an occasion a good many years ago when I was making frequent visits to the late George Willett. It was odd that while George was officially the curator of ornithology at the Los Angeles County Museum he was acknowledged by all to be the dean of the local school of conchologists. Anyway George would not simply name your shells for you, and inasmuch as he was officially an ornithologist, he was under no obligation to do so. However, he was always extremely friendly and willing to help, check, and work with any student who was attempting any serious study. I was working with the material we had dredged from rather deep water and many of them were (and still are) genuine puzzles. George would work for days on one of the hard ones with me.

One day a fellow shell collector at the beach asked me if I would ask Willett's opinion on some shells he had, and I agreed to take them in with me when I paid my customary call. When I mentioned the collector and the matter I was quite surprised when Willett almost indignantly refused to even look at them. I say surprised because I never knew a more even tempered and friendly man than George Willett. It seems that this collector had at one time sent him some shells labelled from localities that he found were definitely impossible, and as I learned then the unforgivable offense to Willett was to have a shell with even doubtful locality data. All without such data belonged in the trash basket in his opinion.

In later years I have become more and more of the same opinion. I was a bit indignant recently when I was again asked to pass on the classification of some shells that could not have conceivably been collected within 5000 miles of the locality given on the labels. Where they all come from I have no idea but certainly anyone who is simply getting names and localities "out of his hat" is contributing nothing but confusion to the shell collectors. The worst of it is that when I express my opinion the collector returns to the place where he bought the shell and John Q. gets in the well known "dog house" with all concerned especially with the competitor.

Please do not send me any shells to classify that you bought from a curio store or have no idea where they came from.

Reminds me of the air mail special I had yesterday offering me a very fine Conus gloria maris which the owner had found in perfect condition washed up on the beach at Naples, Florida. Not bad collecting if he can just get enough of them.

I think of Bronson's story about the woman in Guam who had a Cypraea moneta that she had captured with difficulty while it was swimming rapidly through the water like a fish, and if anyone doubted the story she had the shell there to prove it.

The collectors should get together on this one.

Cypraea madagascarensis Gmelin- This is the name that has been in common usage for over 100 years for the species from Hawaii, even though all knew that the name was geographically inconsistent. Schilder places C. madagascarensis Gmelin 1791 as a race in his usage of Staphylaea nucleus (L.) 1758 and gives the locality 'Madagascar to Dolagos Bay, Dars-es-Salaam, Mauritius and Chagos'. And then logically gives the name granulata Pease 1862 to the

Hawaiian species. This is, in effect, stating that Cypraea mada - gascarensis Gmelin as of Sowerby, 1823 is incorrect, and that the true C. madagascarensis really did originate possibly from Madagascar. Of course, there is still some argument about just what shell Gmelin had in 1791. It is certain that the flattened species from Hawaii could not be confused with nucleus.

The reason for the above is simply because a host of collectors continue to use madagascarensis for the Hawaiian shell while another group use granulata Pease. I am using granulata.

New Publications

New Publications

The Freshwater Mollusks of Uganda and Adjacent Territories by G. Mandahl-Barth Annales Du Musee Royal Du Congo Belge Serie in 8 Sci. Zool. Vol. 32, tervuren, 1954.

This is a large work of 206 pages and 96 figures. The work is in English and is very carefully done. The teeth, hinges and distinguishing characters are clearly illustrated and discussed. It would be a pleasure to work with this book. Too many authors leave the reader in a quandary about which one of several species he has in hand.

The only minor problem remaining is just how to get a nice lot of shells from Uganda to work with. I have no recollection of ever having seen one.

Foreign Shells in Java by L.J.M. Butot Penggamar Alam Aug. 1954

Two species of freshwater shells are illustrated and discussed. They are apparently exotic species now residents of Java.

In this connection it is interesting that we have so many freshwater immigrants in our California streams and canals.

The Nautilus- Vol. 68, No. 2, Oct., 1954

New Gulf of Mexico Gastropods (Terebra and Ocenebra) By R. Tucker Abbott An interesting and well written paper, but as might be expected they are trawled or dredged and must all be far from common.

Some Notes on the Radula By S.C. Hollister. An interesting paper on the relation of the shell to radula with age etc. I recall some observations on the dentition of the radulae in some of our west coast species and finding rather an amazing variation in the same species. At least in some species it seems to be a virtual impossibility to make a diagram of the radula unless of course, one simplifies the matter by merely studying one.

Some Marine Shells from the Persian Gulf By Dr. F. Haas. Dr. Haas gives an interesting list of species. I see a number that I would like very much to examine including the specimen of Haliotis planata, but Chicago is quite a distance from here. It is interesting that many of our local citizens have spent some time with the oil companies over there and have actually brought back a good many shells. However, the average worker seems to have disdained to pick up anything smaller than a man's fist. The result is that all I have seen have been the well known large species.

The Meadows Collection of Achatinellidae By Yoshio Kondo. I find this of unusual interest because I sold the collection to Harvard. There are often certain things about such a deal that are never made known. For example I advised Mr. Meadows that I

could certainly get more money for the collection by breaking it up but he preferred to have his collection go to a great institution intact. He did have a very substantial number of duplicates though which I purchased, but his second collection of these I heard were purchased direct from him by the Chicago Museum. Mr. Meadows collected a vast number of these shells. He sold his collection due to failing eye sight and I hear that he is now blind and living in Seattle, Wash.

Two New Subspecies of *Monadenia Fidelis* (Gray) by Robert R. Talmadge. Mr. Talmadge has made an extensive and careful study of the multitudinous variations in this species.

The Influence of bottom sediments on the distribution of five species of bivalves in the Little Annemessex River, Chesapeake Bay by J. Frances Allen

A new species of *Mesodon* from the Great Smoky Mountains National Park By Leslie Hubricht

Variation in the olive shells of tropical West America By Howard R. Hill. Dr. Hill has written a paper of great interest to all who collect on this coast. The author discusses some of the named forms of *Oliya spicata*. Of course, there are others including in spite of the many names a host of variations without names. I am disposed to think that Dr. Hill has written an excellent paper and has outlined the distinguishing characters of the better known varieties. I might have to hold his coat though while he defends putting *Oliya melchersi* Menke in synonymy with the typical *O. spicata*. The Panamanian *melchersi* certainly does show the characters in many respects but can still be easily separated from anything found in the Gulf.

Algunos Moluscos De La Region De Perija By Sergio Arias C.
Memoria de la Sociedad De Ciencias Naturales La Salle Tomo XIII
No. 35 Land and freshwater species are described and figured.

Corriespondentieblad Van De Nederlandse Malacologische Vereniging
Aug. and Oct., 1954

New York Shell Club Notes No. 9, Nov., 1954

The New York club puts out an interesting paper without charge to members. We did the same in the early years and would no doubt have continued but for the fact that we were informed that no paper without a definite price and offered to the general public could be considered a publication of any kind. The funny part of it was that when we were sending our paper without charge to all who were interested and at times when we started going "into the red ink" would simply call for help similar to passing the hat, we received substantial support. As a matter of fact I recall with amusement that we had a number of supporters who would send us \$25 and as much as \$50 per year. Then we started charging \$2.50 per year and believe it or not took in less money. Our patrons of the \$25 class merely sent in their \$2.50. Of course, the subscription list fell off tremendously which made it less costly. If you include all those who will take anything whether they want it or not if "for free" you could build up a mailing list to rival the Saturday Evening Post.

An article titled Japanese 'Pearl King' dies at 96- Nagoya, Japan
Kokichi Mikimoto was responsible for the great culture pearl industry of Japan.

BRITISH MUSEUM OF NATURAL HISTORY

American conchologists visiting England may see the small, but choice and excellently displayed permanent exhibit of shells in the public galleries of the British Museum of Natural History in London. But they may not know that the Department of Mollusca has just been installed in entirely new quarters and as it is there that they will go for study or reference work a note on the new arrangements may be of interest.

For many years the shell collections have been huddled together in temporary conditions consequent upon the bombing which the Museum sustained during world war II. They are now transferred to a range of rooms, spacious, well lighted and air-conditioned. The damaged cabinets have been repaired and new ones added and the whole collection is being arranged in these in systematic order. Ample table space has been provided, together with appropriate facilities, such as sinks, benches etc., for working in comfort. A small laboratory is being fitted out for microscope and soft anatomy work and in this will be kept for handy reference, histological material, the Museum's stock of radulae which included the famous Gwatkin collection, together with preparations of E.W. Howell, A.J. Peile and others.

The resources of the British National Collection are, no doubt, already known to specialists in America, but only a visit to the new study department will enable the full measure of these resources to be appreciated by anyone who does not know them. Literally, many thousands of types are available and many historic collections are included in the Museum's material, for example the Cuming collection, which figures so heavily in L. Reeve's 'Conchologia Iconica', the Carpenter Mazatlan shells, the J.J. MacAndrew collection, which includes the De Burgh shells, and, coming to more recent acquisitions, the fine and accurate collections of E.R. Sykes and R. Winckworth. But these examples are but a few among the total aggregate.

Best of all, perhaps, is the feature that the very rich molluscan library is housed in the same suite of rooms as the shells and is thus immediately to the hands of workers without delay in obtaining books.

The spirit collection, a very large one, continues to be housed separately for reasons of fire hazard.

We are indebted to Mr. Arthur Blok for the above interesting account

ACADEMY FILLS NEW POST

The Academy of Natural Sciences of Philadelphia has announced the establishment of the new Henry A. Pilsbry Chair of Malacology, with R. Tucker Abbott, former associate curator of mollusks at the National Museum in Washington as the incumbent.

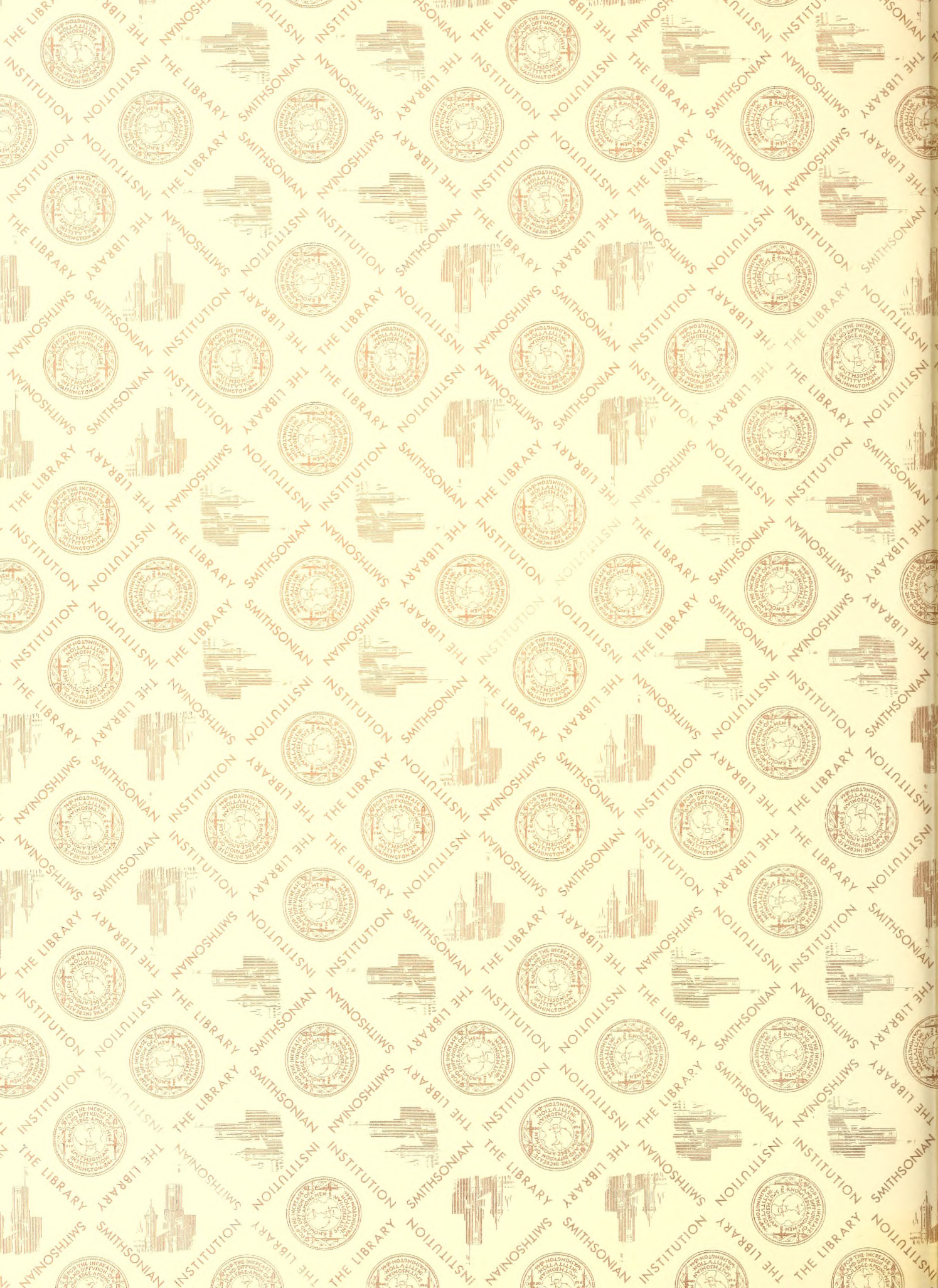
We wish to congratulate both the Academy and Dr. Abbott, and hope sincerely that he may duplicate the period of service of Dr. Pilsbry. Dr. Pilsbry has been with the Academy for 66 years.

Dr. L.G. Hertlein in a recent personal communication mentioned - "Incidentally, I had a letter from Dr. Rehder in which he said that there are seven more or less beachworn specimens of Strombus taurus in the National Museum from Rongelap and Bikini in the Marshall Islands.

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